

APPENDIX G

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APPENDIX G. SUMMARY OF ANALYSIS RESULTS

This appendix contains a summary of the results from the exposure analyses performed for this report and contained in Chapters 9 through 18. This summary is organized into 24 tables, grouped by analysis (unadjusted or adjusted), data form (continuous, dichotomous, or polytomous), and model (1, 2, 3, or 4). Each table contains a reference to its corresponding table in Chapters 9 through 18 and a description of the clinical parameter being summarized. The summary statistics, grouped by model and presented for each analysis and data form, are described below.

G.1 Model 1

For analyses of continuous data using Model 1 (Tables G-1 and G-13), the occupational category, Ranch Hand mean, Comparison mean, difference of Ranch Hand and Comparison means along with the associated 95-percent confidence interval (C.I.), and p-value are given for the unadjusted and adjusted analyses. For analyses of dichotomous data using Model 1 (Tables G-5 and G-17), the occupational category, estimated or adjusted relative risk and associated 95-percent confidence interval, and p-value are given for the unadjusted and adjusted analyses. The number and percentage of abnormalities within the Ranch Hand and Comparison groups are given for the unadjusted analyses. For analyses of polytomous data using Model 1 (Tables G-9 and G-21), the contrast (of the specified abnormal category versus the normal category), occupational category, estimated or adjusted relative risk and associated 95-percent confidence interval, and p-value are given for the unadjusted and adjusted analyses. The number and percentage of Ranch Hands and Comparisons within each abnormal level are given for the unadjusted analyses.

G.2 Models 2 and 4

For analyses of continuous data using Models 2 and 4, (Tables G-2 and G-14 for Model 2; Tables G-4 and G-16 for Model 4), the coefficient of determination (R^2), slope, standard error, and p-value are given for the unadjusted and adjusted analyses. For analyses of dichotomous data using Models 2 and 4 (Tables G-6 and G-18 for Model 2; Tables G-8 and G-20 for Model 4), the estimated or adjusted relative risk and associated 95-percent confidence interval, and p-value are given for the unadjusted and adjusted analyses. For analyses of polytomous data using Models 2 and 4 (Tables G-10 and G-22 for Model 2; Tables G-12 and G-24 for Model 4), the contrast (of the specified abnormal category versus the normal category), the estimated or adjusted relative risk and associated 95-percent confidence interval, and p-value are given for the unadjusted and adjusted analyses.

G.3 Model 3

For analyses of continuous data using Model 3 (Tables G-3 and G-17), the R^2 , dioxin category, dioxin category sample size (n) and mean, difference of Ranch Hand dioxin category and Comparison dioxin category means along with the associated 95-percent confidence interval, and p-value are given for the unadjusted and adjusted analyses. For analyses of dichotomous data using Model 3 (Tables G-7 and G-19), the dioxin category, sample size, estimated or adjusted relative risk and associated 95-percent confidence interval for each Ranch Hand category versus Comparison contrast, and p-value are given for the unadjusted and adjusted analyses. The number and percentage of abnormalities within each dioxin category are given for unadjusted analyses. For analyses of polytomous data using Model 3 (Tables G-11

and G-23), the contrast (of the specified abnormal category versus the normal category), dioxin category, sample size, estimated or adjusted relative risk and associated 95-percent confidence interval for each Ranch Hand category versus Comparison contrast, and p-value are given for the unadjusted and adjusted analyses. The number and percentage of each abnormal level within each dioxin category are given for the unadjusted analyses.

A summary of the analysis (unadjusted or adjusted), data form (continuous, dichotomous, or polytomous), and model (1, 2, 3, or 4) for each table in Appendix G is given below.

Appendix G Table	Analysis	Data Form	Model
G-1	Unadjusted	Continuous	1
G-2	Unadjusted	Continuous	2
G-3	Unadjusted	Continuous	3
G-4	Unadjusted	Continuous	4
G-5	Unadjusted	Dichotomous	1
G-6	Unadjusted	Dichotomous	2
G-7	Unadjusted	Dichotomous	3
G-8	Unadjusted	Dichotomous	4
G-9	Unadjusted	Polytomous	1
G-10	Unadjusted	Polytomous	2
G-11	Unadjusted	Polytomous	3
G-12	Unadjusted	Polytomous	4
G-13	Adjusted	Continuous	1
G-14	Adjusted	Continuous	2
G-15	Adjusted	Continuous	3
G-16	Adjusted	Continuous	4
G-17	Adjusted	Dichotomous	1
G-18	Adjusted	Dichotomous	2
G-19	Adjusted	Dichotomous	3
G-20	Adjusted	Dichotomous	4
G-21	Adjusted	Polytomous	1
G-22	Adjusted	Polytomous	2
G-23	Adjusted	Polytomous	3
G-24	Adjusted	Polytomous	4

Table G-1. Summary of Unadjusted Results for Continuous Variables – Model 1 (Ranch Hands vs. Comparisons)

Table Ref.	Clinical Parameter (Units)	Occupational Category	Means		Difference of Means (95% C.I.)	
			RH	C	p-Value	
9-6	Body Fat (percent) ^a	All	22.09	22.28	-0.19 --	0.436
		Officer	22.04	21.87	0.17 --	0.656
		Enlisted Flyer	21.69	22.20	-0.51 --	0.390
		Enlisted Groundcrew	22.30	22.67	-0.37 --	0.318
9-8	Erythrocyte Sedimentation Rate (mm/hr) ^b	All	4.82	4.74	0.09 --	0.680
		Officer	4.36	4.41	-0.05 --	0.873
		Enlisted Flyer	5.35	5.83	-0.47 --	0.429
		Enlisted Groundcrew	5.06	4.71	0.35 --	0.263
10-35	PSA (ng/ml) ^a	All	1.104	1.120	-0.016 --	0.671
		Officer	1.195	1.229	-0.034 --	0.613
		Enlisted Flyer	1.241	1.234	0.007 --	0.949
		Enlisted Groundcrew	0.985	1.005	-0.020 --	0.693
13-11	AST (U/l) ^a	All	23.01	22.88	0.13 --	0.705
		Officer	23.40	23.34	0.06 --	0.914
		Enlisted Flyer	22.17	22.48	-0.32 --	0.696
		Enlisted Groundcrew	22.99	22.60	0.39 --	0.447
13-13	ALT (U/l) ^a	All	42.58	42.45	0.13 --	0.803
		Officer	42.21	41.79	0.42 --	0.613
		Enlisted Flyer	41.21	42.59	-1.38 --	0.290
		Enlisted Groundcrew	43.50	42.99	0.51 --	0.537
13-15	GGT (U/l) ^a	All	43.62	42.61	1.01 --	0.340
		Officer	42.32	40.74	1.57 --	0.332
		Enlisted Flyer	44.45	45.29	-0.84 --	0.758
		Enlisted Groundcrew	44.52	43.44	1.09 --	0.506
13-17	Alkaline Phosphatase (U/l) ^a	All	81.81	79.65	2.16 --	0.024
		Officer	78.44	76.74	1.70 --	0.241
		Enlisted Flyer	83.79	83.45	0.34 --	0.889
		Enlisted Groundcrew	84.22	81.04	3.18 --	0.030
13-19	Total Bilirubin (mg/dl) ^a	All	0.518	0.520	-0.002 --	0.857
		Officer	0.546	0.543	0.003 --	0.887
		Enlisted Flyer	0.489	0.513	-0.023 --	0.365
		Enlisted Groundcrew	0.506	0.503	0.003 --	0.869
13-22	Lactic Dehydrogenase (U/l) ^a	All	154.0	153.8	0.3 --	0.822
		Officer	153.9	154.4	-0.5 --	0.799
		Enlisted Flyer	152.3	152.5	-0.3 --	0.927
		Enlisted Groundcrew	154.9	153.7	1.2 --	0.488
13-24	Cholesterol (mg/dl) ^c	All	211.4	211.7	-0.3 --	0.838
		Officer	206.2	210.0	-3.8 --	0.149
		Enlisted Flyer	215.0	216.3	-1.3 --	0.760
		Enlisted Groundcrew	214.7	211.8	3.0 --	0.239

**Table G-1. Summary of Unadjusted Results for Continuous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter (Units)	Occupational Category	Means		Difference of Means (95% C.I.)	p-Value
			RH	C		
13-26	HDL Cholesterol (mg/dl) ^a	All	44.97	44.84	0.13 --	0.805
		Officer	46.64	46.68	-0.04 --	0.965
		Enlisted Flyer	45.07	43.58	1.49 --	0.240
		Enlisted Groundcrew	43.44	43.69	-0.25 --	0.739
13-28	Cholesterol-HDL Ratio ^a	All	4.66	4.68	-0.02 --	0.723
		Officer	4.39	4.46	-0.07 --	0.425
		Enlisted Flyer	4.72	4.93	-0.21 --	0.155
		Enlisted Groundcrew	4.90	4.81	0.10 --	0.282
13-30	Triglycerides (mg/dl) ^a	All	122.8	120.7	2.1 --	0.539
		Officer	114.9	111.7	3.2 --	0.523
		Enlisted Flyer	123.9	137.7	-13.8 --	0.122
		Enlisted Groundcrew	130.0	123.6	6.4 --	0.230
13-32	Creatine Phosphokinase (U/l) ^a	All	106.3	105.5	0.8 --	0.791
		Officer	105.8	104.3	1.4 --	0.748
		Enlisted Flyer	97.2	101.0	-3.8 --	0.562
		Enlisted Groundcrew	110.8	108.2	2.6 --	0.565
13-34	Serum Amylase (U/l) ^a	All	56.92	56.85	0.07 --	0.942
		Officer	54.88	57.86	-2.98 --	0.048
		Enlisted Flyer	58.46	55.91	2.55 --	0.284
		Enlisted Groundcrew	58.23	56.29	1.95 --	0.182
13-41	Prealbumin (mg/dl)	All	29.54	29.61	-0.07 (-0.50,0.37)	0.766
		Officer	29.65	29.87	-0.22 (-0.92,0.47)	0.532
		Enlisted Flyer	29.56	29.33	0.23 (-0.85,1.31)	0.679
		Enlisted Groundcrew	29.44	29.48	-0.03 (-0.70,0.63)	0.922
13-43	Albumin (mg/dl)	All	4,195.6	4,201.2	-5.6 (-34.9,23.8)	0.709
		Officer	4,172.9	4,204.6	-31.8 (-78.3,14.8)	0.181
		Enlisted Flyer	4,190.0	4,159.9	30.1 (-42.4,102.5)	0.416
		Enlisted Groundcrew	4,218.8	4,211.9	7.0 (-37.3,51.2)	0.758
13-45	α -1-Acid Glycoprotein (mg/dl) ^a	All	84.65	84.15	0.50 --	0.550
		Officer	80.89	82.22	-1.33 --	0.298
		Enlisted Flyer	85.49	85.88	-0.38 --	0.855
		Enlisted Groundcrew	87.92	85.31	2.61 --	0.044
13-47	α -1-Antitrypsin (mg/dl) ^c	All	150.0	146.5	3.5 --	0.002
		Officer	143.9	143.0	0.9 --	0.609
		Enlisted Flyer	155.3	151.1	4.2 --	0.136
		Enlisted Groundcrew	153.5	148.0	5.5 --	0.001
13-49	α -2-Macroglobulin (mg/dl) ^a	All	170.6	171.3	-0.7 --	0.726
		Officer	170.6	171.0	-0.4 --	0.901
		Enlisted Flyer	177.0	177.4	-0.4 --	0.935
		Enlisted Groundcrew	168.1	169.6	-1.5 --	0.608
13-51	Apolipoprotein B (mg/dl) ^c	All	110.5	111.5	-1.1 --	0.320
		Officer	106.4	109.6	-3.3 --	0.053
		Enlisted Flyer	113.2	115.2	-2.0 --	0.463
		Enlisted Groundcrew	113.1	112.0	1.2 --	0.479

**Table G-1. Summary of Unadjusted Results for Continuous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter (Units)	Occupational Category	Means		Difference of Means (95% C.I.)	
			RH	C	p-Value	
13-53	C3 Complement (mg/dl) ^a	All	118.9	118.5	0.4 --	0.640
		Officer	114.9	114.6	0.3 --	0.814
		Enlisted Flyer	120.3	120.7	-0.4 --	0.862
		Enlisted Groundcrew	122.1	121.3	0.8 --	0.537
13-55	C4 Complement (mg/dl) ^a	All	25.71	25.91	-0.20 --	0.395
		Officer	24.73	25.54	-0.81 --	0.024
		Enlisted Flyer	26.52	25.50	-1.02 --	0.076
		Enlisted Groundcrew	26.31	26.38	-0.06 --	0.862
13-57	Haptoglobin (mg/dl) ^c	All	135.2	126.5	8.7 --	0.002
		Officer	122.4	116.3	6.1 --	0.140
		Enlisted Flyer	147.8	137.4	10.4 --	0.141
		Enlisted Groundcrew	142.5	132.3	10.2 --	0.016
13-59	Transferrin (mg/dl) ^a	All	252.7	249.6	3.1 --	0.044
		Officer	250.0	248.4	1.6 --	0.510
		Enlisted Flyer	254.5	251.5	3.0 --	0.439
		Enlisted Groundcrew	254.5	250.0	4.5 --	0.056
14-7	Systolic Blood Pressure (mm Hg) ^a	All	124.9	125.6	-0.7 --	0.383
		Officer	125.9	126.2	-0.2 --	0.865
		Enlisted Flyer	127.0	127.3	-0.3 --	0.875
		Enlisted Groundcrew	123.1	124.5	-1.4 --	0.241
14-9	Diastolic Blood Pressure (mm Hg) ^c	All	74.55	74.61	-0.06	0.883
		Officer	74.17	74.21	-0.04	0.952
		Enlisted Flyer	75.22	75.10	0.12	0.905
		Enlisted Groundcrew	74.63	74.80	-0.17	0.780
15-3	RBC Count (million/mm ³)	All	4.95	4.96	-0.02 (-0.05,0.02)	0.318
		Officer	4.89	4.92	-0.03 (-0.09,0.02)	0.234
		Enlisted Flyer	4.92	4.97	-0.04 (-0.12,0.04)	0.333
		Enlisted Groundcrew	5.01	5.00	0.01 (-0.04,0.06)	0.753
15-5	WBC Count (thousand/mm ³) ^a	All	6.67	6.65	0.02 --	0.789
		Officer	6.33	6.33	0.00 --	0.970
		Enlisted Flyer	6.72	6.86	-0.14 --	0.474
		Enlisted Groundcrew	6.97	6.86	0.11 --	0.358
15-7	Hemoglobin (gm/dl)	All	15.32	15.33	0.00 (-0.09,0.09)	0.979
		Officer	15.23	15.29	-0.06 (-0.20,0.08)	0.389
		Enlisted Flyer	15.29	15.38	-0.08 (-0.30,0.13)	0.445
		Enlisted Groundcrew	15.42	15.34	0.09 (-0.05,0.22)	0.206
15-9	Hematocrit (percent)	All	45.56	45.59	-0.04 (-0.31,0.24)	0.798
		Officer	45.24	45.48	-0.24 (-0.67,0.19)	0.274
		Enlisted Flyer	45.49	45.72	-0.23 (-0.90,0.44)	0.504
		Enlisted Groundcrew	45.88	45.65	0.22 (-0.18,0.63)	0.279
15-11	Platelet Count (thousand/mm ³) ^c	All	207.0	203.9	3.1 --	0.150
		Officer	196.6	205.1	-8.5 --	0.012
		Enlisted Flyer	213.8	198.8	14.9 --	0.005
		Enlisted Groundcrew	213.9	204.6	9.3 --	0.004

**Table G-1. Summary of Unadjusted Results for Continuous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter (Units)	Occupational Category	Means		Difference of Means (95% C.I.)	
			RH	C	p-Value	
15-13	Prothrombin Time (seconds) ^a	All	10.48	10.49	-0.01 --	0.870
		Officer	10.54	10.52	0.02 --	0.720
		Enlisted Flyer	10.46	10.49	-0.03 --	0.748
		Enlisted Groundcrew	10.45	10.47	-0.02 --	0.714
15-16	Absolute Neutrophils (segs) (thousand/mm ³) ^a	All	3.84	3.81	0.03 --	0.612
		Officer	3.59	3.61	-0.02 --	0.804
		Enlisted Flyer	3.92	3.95	-0.02 --	0.885
		Enlisted Groundcrew	4.06	3.95	-0.01 --	0.263
15-17	Absolute Neutrophils (bands) (Nonzero Measurements) (thousand/mm ³) ^a	All	0.201	0.189	0.012 --	0.123
		Officer	0.194	0.180	0.014 --	0.250
		Enlisted Flyer	0.190	0.204	-0.014 --	0.478
		Enlisted Groundcrew	0.213	0.193	0.021 --	0.089
15-19	Absolute Lymphocytes (thousand/mm ³) ^a	All	1.76	1.75	0.00 --	0.920
		Officer	1.70	1.67	0.04 --	0.392
		Enlisted Flyer	1.71	1.79	-0.08 --	0.248
		Enlisted Groundcrew	1.83	1.82	0.01 --	0.891
15-20	Absolute Monocytes (thousands/mm ³) ^c	All	0.477	0.481	-0.004 --	0.648
		Officer	0.463	0.471	-0.008 --	0.594
		Enlisted Flyer	0.470	0.507	-0.037 --	0.118
		Enlisted Groundcrew	0.492	0.482	0.011 --	0.455
15-21	Absolute Eosinophils (Nonzero Measurements) (thousand/mm ³) ^a	All	0.159	0.161	-0.002 --	0.684
		Officer	0.160	0.153	0.007 --	0.422
		Enlisted Flyer	0.162	0.164	-0.002 --	0.895
		Enlisted Groundcrew	0.157	0.167	-0.011 --	0.183
15-23	Absolute Basophils (Nonzero Measurements) (thousand/mm ³) ^a	All	0.078	0.080	-0.002 --	0.315
		Officer	0.076	0.077	-0.001 --	0.838
		Enlisted Flyer	0.079	0.082	-0.003 --	0.577
		Enlisted Groundcrew	0.079	0.082	-0.003 --	0.322
16-6	Time to Diabetes Onset (years)	All	--	--	--	0.603
		Officer	--	--	--	0.916
		Enlisted Flyer	--	--	--	0.740
		Enlisted Groundcrew	--	--	--	0.715
16-9	TSH (μ IU/ml) ^a	All	1.88	1.81	-0.08 --	0.130
		Officer	2.01	1.89	0.12 --	0.170
		Enlisted Flyer	1.72	1.82	-0.10 --	0.428
		Enlisted Groundcrew	1.84	1.73	0.11 --	0.139
16-11	Thyroxine (μ g/dl) ^c	All	7.07	7.04	0.03 --	0.601
		Officer	6.76	6.84	-0.08 --	0.373
		Enlisted Flyer	7.28	7.24	0.03 --	0.818
		Enlisted Groundcrew	7.27	7.15	0.12 --	0.154
16-14	Fasting Glucose (mg/dl) ^a	All	101.4	101.8	-0.3 --	0.745
		Officer	101.0	100.0	1.1 --	0.468
		Enlisted Flyer	103.2	104.9	-1.7 --	0.507
		Enlisted Groundcrew	101.0	102.3	-1.3 --	0.388

**Table G-1. Summary of Unadjusted Results for Continuous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter (Units)	Occupational Category	Means		Difference of Means (95% C.I.)	
			RH	C	p-Value	
16-16	2-Hour Postprandial Glucose (mg/dl) ^a	All	105.2	104.9	0.3 --	0.818
		Officer	106.1	101.8	4.3 --	0.053
		Enlisted Flyer	107.8	111.3	-3.5 --	0.342
		Enlisted Groundcrew	103.4	105.8	-2.3 --	0.274
16-20	Serum Insulin (μIU/ml) ^a	All	47.95	47.92	0.03 --	0.990
		Officer	45.60	42.40	3.20 --	0.283
		Enlisted Flyer	49.81	54.92	-5.11 --	0.369
		Enlisted Groundcrew	49.49	51.33	-1.84 --	0.574
16-22	α-1-C Hemoglobin (percent) ^a	All	6.48	6.49	-0.01 --	0.919
		Officer	6.37	6.31	0.07 --	0.387
		Enlisted Flyer	6.53	6.67	-0.14 --	0.280
		Enlisted Groundcrew	6.57	6.59	-0.03 --	0.714
16-24	Total Testosterone (ng/dl) ^c	All	423.1	422.6	0.5 --	0.945
		Officer	406.9	413.4	-6.4 --	0.606
		Enlisted Flyer	439.6	428.4	11.2 --	0.577
		Enlisted Groundcrew	431.2	428.7	2.5 --	0.835
16-26	Free Testosterone (pg/ml) ^c	All	13.96	13.92	0.04 --	0.852
		Officer	12.91	13.26	-0.36 --	0.269
		Enlisted Flyer	14.03	13.95	0.08 --	0.878
		Enlisted Groundcrew	14.89	14.49	0.40 --	0.209
16-28	Estradiol (pg/ml) ^c	All	40.06	40.63	-0.57 --	0.434
		Officer	38.38	41.81	-3.43 --	0.003
		Enlisted Flyer	42.87	40.70	2.17 --	0.238
		Enlisted Groundcrew	40.49	39.60	0.89 --	0.418
16-30	LH (mIU/ml) ^a	All	3.86	3.86	0.00 --	0.979
		Officer	4.09	3.82	0.27 --	0.131
		Enlisted Flyer	3.67	4.02	-0.34 --	0.194
		Enlisted Groundcrew	3.74	3.85	-0.11 --	0.491
16-32	FSH (mIU/ml) ^a	All	6.05	5.98	0.07 --	0.666
		Officer	6.62	6.11	0.51 --	0.071
		Enlisted Flyer	6.02	5.99	0.03 --	0.941
		Enlisted Groundcrew	5.59	5.86	-0.27 --	0.257
17-4	CD3+ Cells (T Cells) (cells/mm ³) ^a	All	1,231.0	1,257.7	-26.7 --	0.431
		Officer	1,230.0	1,190.2	39.8 --	0.449
		Enlisted Flyer	1,197.2	1,286.8	-89.6 --	0.270
		Enlisted Groundcrew	1,247.1	1,301.3	-54.2 --	0.308
17-5	CD4+ Cells (Helper T Cells) (cells/mm ³) ^a	All	842.0	857.0	-15.0 --	0.511
		Officer	838.0	824.7	13.3 --	0.708
		Enlisted Flyer	808.4	870.2	-61.8 --	0.254
		Enlisted Groundcrew	861.4	877.9	-16.5 --	0.646
17-6	CD8+ Cells (Suppressor T Cells) (cells/mm ³) ^a	All	564.5	587.1	-22.6 --	0.254
		Officer	558.7	551.7	7.0 --	0.818
		Enlisted Flyer	563.9	625.6	-61.7 --	0.207
		Enlisted Groundcrew	571.0	601.7	-30.7 --	0.319

**Table G-1. Summary of Unadjusted Results for Continuous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter (Units)	Occupational Category	Means		Difference of Means (95% C.I.)	
			RH	C	p-Value	
17-7	CD16+56+ Cells (Natural Killer Cells) (cells/mm ³) ^a	All	259.3	275.9	-16.6 --	0.082
		Officer	266.2	276.1	-9.9 --	0.521
		Enlisted Flyer	236.7	290.2	-53.5 --	0.018
		Enlisted Groundcrew	262.4	270.6	-8.2 --	0.572
17-8	CD20+ Cells (B Cells) (cells/mm ³) ^a	All	184.0	185.5	-1.5 --	0.858
		Officer	175.3	167.1	8.1 --	0.496
		Enlisted Flyer	170.2	185.2	-15.0 --	0.420
		Enlisted Groundcrew	200.4	201.1	-0.7 --	0.961
17-9	CD3+CD4+ Cells (Helper T Cells) (cells/mm ³) ^a	All	767.4	780.9	-13.4 --	0.541
		Officer	763.1	749.6	13.5 --	0.693
		Enlisted Flyer	737.4	791.9	-54.5 --	0.296
		Enlisted Groundcrew	785.6	801.8	-16.1 --	0.641
17-10	Absolute Lymphocytes (cells/mm ³) ^a	All	1,781.2	1,777.9	3.2 --	0.909
		Officer	1,730.0	1,685.2	44.8 --	0.292
		Enlisted Flyer	1,753.3	1,817.2	-63.8 --	0.360
		Enlisted Groundcrew	1,840.2	1,849.6	-9.5 --	0.828
17-11	IgA (mg/dl) ^a	All	232.4	233.3	-0.9 --	0.860
		Officer	224.8	225.2	-0.4 --	0.958
		Enlisted Flyer	238.1	236.6	1.4 --	0.912
		Enlisted Groundcrew	237.3	239.5	-2.2 --	0.779
17-12	IgG (mg/dl) ^a	All	1,035.5	1,047.3	-11.8 --	0.273
		Officer	1,022.2	1,029.8	-7.7 --	0.649
		Enlisted Flyer	1,021.8	1,048.9	-27.2 --	0.307
		Enlisted Groundcrew	1,053.3	1,062.2	-8.9 --	0.587
17-13	IgM (mg/dl) ^a	All	96.3	98.4	-2.1 --	0.373
		Officer	95.2	95.9	-0.6 --	0.862
		Enlisted Flyer	94.6	104.4	-9.7 --	0.102
		Enlisted Groundcrew	98.0	98.7	-0.8 --	0.831
18-8	FVC (percent of predicted)	All	99.31	98.93	0.38 (-0.91,1.68)	0.564
		Officer	100.48	100.14	0.33 (-1.73,2.39)	0.753
		Enlisted Flyer	99.64	98.88	0.75 (-2.45,3.96)	0.645
		Enlisted Groundcrew	98.14	97.90	0.24 (-1.71,2.18)	0.811
18-9	FEV ₁ (percent of predicted)	All	94.13	94.28	-0.15 (-1.66,1.37)	0.849
		Officer	95.47	95.65	-0.18 (-2.58,2.23)	0.886
		Enlisted Flyer	91.09	92.30	-1.21 (-4.95,2.54)	0.527
		Enlisted Groundcrew	94.14	93.74	0.40 (-1.87,2.67)	0.729
18-10	Ratio of Observed FEV ₁ to Observed FVC ^d	All	0.760	0.763	-0.003 --	0.366
		Officer	0.756	0.761	-0.005 --	0.376
		Enlisted Flyer	0.741	0.748	-0.007 --	0.431
		Enlisted Groundcrew	0.772	0.771	0.001 --	0.843

^a Means transformed from natural logarithm scale; difference of means after transformation to original scale; confidence interval not given because analysis was performed on natural logarithm scale; p-value based on difference of means on natural logarithm scale.

**Table G-1. Summary of Unadjusted Results for Continuous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

^b Means transformed from natural logarithm (clinical parameter + 0.1) scale; difference of means after transformation to original scale; confidence interval not given because analysis was performed on natural logarithm (clinical parameter + 0.1) scale; p-value based on difference of means on natural logarithm (clinical parameter + 0.1) scale.

^c Means transformed from square root scale; difference of means after transformation to original scale; confidence interval not given because analysis was performed on square root scale; p-value based on difference of means on square root scale.

^d Means transformed from natural logarithm (1 – clinical parameter) scale; difference of means after transformation to original scale; confidence interval not given because analysis was performed on natural logarithm (1 – clinical parameter) scale; p-value based on difference of means on natural logarithm (1 – clinical parameter) scale.

Note: RH = Ranch Hand; C = Comparison.

Table G-2. Summary of Unadjusted Results for Continuous Variables – Model 2 (Ranch Hands: Log₂ (Initial Dioxin))

Table Ref.	Clinical Parameter (Units)	R ²	Slope (Standard Error) ^a	p-Value
9-6	Body Fat (percent) ^b	0.006	0.015 (0.009)	0.081
9-8	Erythrocyte Sedimentation Rate (mm/hr) ^c	0.009	0.029 (0.034)	0.387
10-35	PSA (ng/ml) ^b	0.037	-0.071 (0.027)	0.010
13-11	AST (U/l) ^b	0.011	0.003 (0.012)	0.813
13-13	ALT (U/l) ^b	0.036	0.013 (0.010)	0.199
13-15	GGT (U/l) ^b	0.013	0.004 (0.019)	0.823
13-17	Alkaline Phosphatase (U/l) ^b	0.009	-0.004 (0.009)	0.646
13-19	Total Bilirubin (mg/dl) ^b	0.013	-0.014 (0.016)	0.368
13-22	Lactic Dehydrogenase (U/l) ^b	0.009	-0.001 (0.006)	0.908
13-24	Cholesterol (mg/dl) ^d	0.017	0.129 (0.046)	0.005
13-26	HDL Cholesterol (mg/dl) ^b	0.053	-0.009 (0.009)	0.312
13-28	Cholesterol-HDL Ratio ^b	0.055	0.028 (0.009)	0.003
13-30	Triglycerides (mg/dl) ^b	0.025	0.033 (0.023)	0.140
13-32	Creatine Phosphokinase (U/l) ^b	0.013	0.005 (0.021)	0.800
13-34	Serum Amylase (U/l) ^b	0.052	-0.024 (0.013)	0.070
13-41	Prealbumin (mg/dl)	0.030	-0.041 (0.178)	0.818
13-43	Albumin (mg/dl)	0.023	13.830 (10.970)	0.208
13-45	α -1-Acid Glycoprotein (mg/dl) ^b	<0.001	0.000 (0.008)	0.992
13-47	α -1-Antitrypsin (mg/dl) ^d	0.013	0.066 (0.036)	0.071
13-49	α -2-Macroglobulin (mg/dl) ^b	<0.001	-0.004 (0.009)	0.698
13-51	Apolipoprotein B (mg/dl) ^d	0.014	0.107 (0.041)	0.009
13-53	C3 Complement (mg/dl) ^b	0.071	0.012 (0.005)	0.023
13-55	C4 Complement (mg/dl) ^b	0.002	-0.003 (0.007)	0.701
13-57	Haptoglobin (mg/dl) ^d	0.002	0.084 (0.097)	0.387
13-59	Transferrin (mg/dl) ^b	0.001	0.003 (0.005)	0.594
14-7	Systolic Blood Pressure (mm Hg) ^b	0.049	-0.006 (0.005)	0.238
14-9	Diastolic Blood Pressure (mm Hg) ^d	0.023	0.025 (0.019)	0.190
15-3	RBC Count (million/mm ³)	0.019	0.023 (0.014)	0.102
15-5	WBC Count (thousand/mm ³) ^b	0.022	0.019 (0.009)	0.035
15-7	Hemoglobin (gm/dl)	0.011	0.078 (0.034)	0.023
15-9	Hematocrit (percent)	0.011	0.241 (0.104)	0.021
15-11	Platelet Count (thousand/mm ³) ^d	0.016	0.145 (0.057)	0.012
15-13	Prothrombin Time (seconds) ^b	0.004	-0.001 (0.003)	0.572
15-16	Absolute Neutrophils (segs) (thousand/mm ³) ^b	0.015	0.019 (0.012)	0.115
15-17	Absolute Neutrophils (Nonzero Measurements) (bands) (thousand/mm ³) ^b	0.004	-0.031 (0.032)	0.343
15-19	Absolute Lymphocytes (thousand/mm ³) ^b	0.021	0.023 (0.012)	0.063
15-20	Absolute Monocytes (thousand/mm ³) ^d	0.003	0.003 (0.006)	0.568
15-21	Absolute Eosinophils (Nonzero Measurements) (thousand/mm ³) ^b	0.001	0.005 (0.025)	0.836
15-23	Absolute Basophils (Nonzero Measurements) (thousand/mm ³) ^b	0.013	0.009 (0.022)	0.685
16-6	Time to Diabetes Onset (years) ^e	--	-0.021 (0.023)	0.356
16-9	TSH (μ IU/ml) ^b	0.002	-0.015 (0.021)	0.475
16-11	Thyroxine (μ g/dl) ^d	0.012	0.010 (0.008)	0.250
16-14	Fasting Glucose (mg/dl) ^b	0.102	0.011 (0.008)	0.174

**Table G-2. Summary of Unadjusted Results for Continuous Variables – Model 2
(Ranch Hands: Log₂ (Initial Dioxin)) (Continued)**

Table Ref.	Clinical Parameter (Units)	R ²	Slope (Standard Error) ^a	p-Value
16-16	2-Hour Postprandial Glucose (mg/dl) ^b	0.076	-0.010 (0.011)	0.363
16-20	Serum Insulin (μ IU/ml) ^b	0.092	0.020 (0.036)	0.571
16-22	α -1-C Hemoglobin (percent) ^b	0.107	0.017 (0.006)	0.009
16-24	Total Testosterone (ng/dl) ^d	0.118	0.287 (0.144)	0.047
16-26	Free Testosterone (pg/ml) ^d	0.084	0.066 (0.022)	0.003
16-28	Estradiol (pg/ml) ^d	0.007	0.084 (0.049)	0.087
16-30	LH (mIU/ml) ^b	0.001	-0.016 (0.023)	0.496
16-32	FSH (mIU/ml) ^b	0.008	-0.035 (0.021)	0.099
17-4	CD3+ Cells (T Cells) (cells/mm ³) ^b	0.013	0.023 (0.023)	0.317
17-5	CD4+ Cells (Helper T Cells) (cells/mm ³) ^b	0.018	0.027 (0.023)	0.254
17-6	CD8+ Cells (Suppressor T Cells) (cells/mm ³) ^b	0.001	0.012 (0.029)	0.688
17-7	CD16+56+ Cells (Natural Killer Cells) (cells/mm ³) ^b	0.038	-0.029 (0.032)	0.370
17-8	CD20+ Cells (B Cells) (cells/mm ³) ^b	0.052	0.081 (0.035)	0.024
17-9	CD3+CD4+ Cells (Helper T Cells) (cells/mm ³) ^b	0.018	0.030 (0.024)	0.226
17-10	Absolute Lymphocytes (cells/mm ³) ^b	0.019	0.019 (0.012)	0.121
17-11	IgA (mg/dl) ^b	0.007	0.021 (0.017)	0.224
17-12	IgG (mg/dl) ^b	0.002	-0.001 (0.009)	0.922
17-13	IgM (mg/dl) ^b	0.005	0.007 (0.019)	0.711
18-8	FVC (percent of predicted)	0.018	0.332 (0.491)	0.499
18-9	FEV ₁ (percent of predicted)	0.006	0.870 (0.581)	0.135
18-10	Observed FEV ₁ to Observed FVC ^f	0.053	-0.026 (0.011)	0.023

^a Adjusted for percent body fat at the time of the blood measurement for dioxin.

^b Slope and standard error based on natural logarithm of clinical parameter versus log₂ (initial dioxin).

^c Slope and standard error based on natural logarithm of (clinical parameter + 0.1) versus log₂ (initial dioxin).

^d Slope and standard error based on square root of clinical parameter versus log₂ (initial dioxin).

^e Slope and standard error based on time to diabetes onset versus log₂ (initial dioxin) under a censored Weibull distribution.

^f Slope and standard error based on natural logarithm of (1 – clinical parameter) versus log₂ (initial dioxin).

--: R-squared not presented because analysis was based on a censored Weibull distribution.

Table G-3. Summary of Unadjusted Results for Continuous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category)

Table Ref.	Clinical Parameter (Units)	R ²	Dioxin Category	n	Adj. Mean ^a	Difference of Means vs. Comparisons (95% C.I.)	p-Value
9-6	Body Fat (percent) ^b	0.025	Comparison	1,213	22.26		
			Background RH	381	20.64	-1.62 --	<0.001
			Low RH	239	23.04	0.78 --	0.045
			High RH	243	23.57	1.31 --	0.001
			Low plus High RH	482	23.30	1.04 --	0.001
9-8	Erythrocyte Sedimentation Rate (mm/hr) ^c	0.022	Comparison	1,213	4.74		
			Background RH	381	4.48	-0.26 --	0.323
			Low RH	239	5.06	0.32 --	0.350
			High RH	243	5.12	0.38 --	0.259
			Low plus High RH	482	5.09	0.35 --	0.176
G-12	10-35 PSA (ng/ml) ^b	0.009	Comparison	1,152	1.127		
			Background RH	365	1.099	-0.028 --	0.587
			Low RH	222	1.205	0.078 --	0.227
			High RH	236	1.023	-0.104 --	0.079
			Low plus High RH	458	1.108	-0.019 --	0.692
13-11	AST (U/l) ^b	0.011	Comparison	1,194	22.84		
			Background RH	376	22.54	-0.30 --	0.501
			Low RH	236	23.39	0.55 --	0.306
			High RH	240	23.36	0.52 --	0.334
			Low plus High RH	476	23.37	0.53 --	0.193
13-13	ALT (U/l) ^b	0.039	Comparison	1,194	42.37		
			Background RH	376	41.32	-1.05 --	0.129
			Low RH	236	43.14	0.77 --	0.368
			High RH	240	44.27	1.90 --	0.027
			Low plus High RH	476	43.71	1.34 --	0.041

Table G-3. Summary of Unadjusted Results for Continuous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter (Units)	R ²	Dioxin Category	n	Adj. Mean ^a	Difference of Means vs. Comparisons (95% C.I.)	p-Value
13-15	GGT (U/l) ^b	0.026	Comparison	1,194	42.21		
			Background RH	376	40.81	-1.40 --	0.296
			Low RH	236	43.99	1.78 --	0.283
			High RH	240	47.38	5.17 --	0.003
			Low plus High RH	476	45.67	3.46 --	0.007
13-17	Alkaline Phosphatase (U/l) ^b	0.003	Comparison	1,194	79.57		
			Background RH	376	81.50	1.93 --	0.130
			Low RH	236	82.34	2.78 --	0.070
			High RH	240	81.36	1.79 --	0.238
			Low plus High RH	476	81.85	2.28 --	0.051
13-19	Total Bilirubin (mg/dl) ^b	0.002	Comparison	1,194	0.520		
			Background RH	376	0.526	0.006 --	0.673
			Low RH	236	0.516	-0.004 --	0.828
			High RH	240	0.506	-0.014 --	0.418
			Low plus High RH	476	0.511	-0.009 --	0.500
13-22	Lactic Dehydrogenase (U/l) ^b	0.027	Comparison	1,192	153.7		
			Background RH	376	154.3	0.6 --	0.693
			Low RH	236	153.6	-0.1 --	0.941
			High RH	240	154.1	0.4 --	0.816
			Low plus High RH	476	153.8	0.1 --	0.916
13-24	Cholesterol (mg/dl) ^d	0.006	Comparison	1,194	211.7		
			Background RH	376	208.8	-2.9 --	0.183
			Low RH	236	209.3	-2.4 --	0.351
			High RH	240	217.4	5.7 --	0.032
			Low plus High RH	476	213.4	1.7 --	0.422
13-26	HDL Cholesterol (mg/dl) ^b	0.059	Comparison	1,193	44.79		
			Background RH	376	45.54	0.75 --	0.269
			Low RH	235	45.23	0.44 --	0.585
			High RH	240	43.58	-1.21 --	0.130
			Low plus High RH	475	44.39	-0.40 --	0.519

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Table G-3. Summary of Unadjusted Results for Continuous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter (Units)	R ²	Dioxin Category	n	Adj. Mean ^a	Difference of Means vs. Comparisons (95% C.I.)	p-Value
13-28	Cholesterol-HDL Ratio ^b	0.046	Comparison	1,193	4.69		
			Background RH	376	4.55	-0.14 --	0.068
			Low RH	235	4.58	-0.11 --	0.220
			High RH	240	4.95	0.26 --	0.005
			Low plus High RH	475	4.76	0.07 --	0.282
13-30	Triglycerides (mg/dl) ^b	0.057	Comparison	1,194	120.3		
			Background RH	375	114.5	-5.8 --	0.172
			Low RH	236	119.7	-0.6 --	0.897
			High RH	240	140.4	20.1 --	<0.001
			Low plus High RH	476	129.7	9.4 --	0.023
13-32	Creatine Phosphokinase (U/l) ^b	0.026	Comparison	1,194	105.4		
			Background RH	376	105.6	0.2 --	0.961
			Low RH	236	108.2	2.8 --	0.547
			High RH	240	106.3	0.9 --	0.843
			Low plus High RH	476	107.2	1.8 --	0.602
13-34	Serum Amylase (U/l) ^b	0.039	Comparison	1,194	56.88		
			Background RH	376	55.87	-1.01 --	0.419
			Low RH	236	60.54	3.66 --	0.019
			High RH	240	54.89	-1.99 --	0.178
			Low plus High RH	476	57.63	0.75 --	0.523
13-41	Prealbumin (mg/dl)	0.017	Comparison	1,194	29.62		
			Background RH	376	29.53	-0.09 (-0.67,0.49)	0.760
			Low RH	236	29.47	-0.15 (-0.85,0.54)	0.665
			High RH	240	29.65	0.03 (-0.66,0.73)	0.927
			Low plus High RH	476	29.56	-0.06 (-0.59,0.47)	0.825
13-43	Albumin (mg/dl)	0.017	Comparison	1,194	4,199.7		
			Background RH	376	4,200.6	0.9 (-37.7,39.6)	0.962
			Low RH	236	4,155.3	-44.5 (-90.8,1.8)	0.060
			High RH	240	4,228.9	29.2 (-16.9,75.3)	0.215
			Low plus High RH	476	4,192.4	-7.3 (-42.6,28.0)	0.685

Table G-3. Summary of Unadjusted Results for Continuous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter (Units)	R ²	Dioxin Category	n	Adj. Mean ^a	Difference of Means vs. Comparisons (95% C.I.)	p-Value
13-45	α -1-Acid Glycoprotein (mg/dl) ^b	0.003	Comparison	1,194	84.29		
			Background RH	376	83.02	-1.27 --	0.256
			Low RH	236	84.82	0.53 --	0.692
			High RH	240	87.02	2.73 --	0.045
			Low plus High RH	476	85.92	1.63 --	0.114
13-47	α -1-Antitrypsin (mg/dl) ^d	0.008	Comparison	1,194	146.8		
			Background RH	376	147.9	1.1 --	0.470
			Low RH	236	148.9	2.1 --	0.244
			High RH	240	154.0	7.2 --	<0.001
			Low plus High RH	476	151.4	4.6 --	0.001
13-49	α -2-Macroglobulin (mg/dl) ^b	0.001	Comparison	1,194	171.2		
			Background RH	376	170.2	-1.0 --	0.706
			Low RH	236	170.2	-1.0 --	0.747
			High RH	240	170.2	-1.0 --	0.741
			Low plus High RH	476	170.2	-1.0 --	0.669
13-51	Apolipoprotein B (mg/dl) ^d	0.005	Comparison	1,194	111.5		
			Background RH	376	108.8	-2.7 --	0.057
			Low RH	236	108.9	-2.6 --	0.131
			High RH	240	114.6	3.1 --	0.073
			Low plus High RH	476	111.8	0.3 --	0.843
13-53	C3 Complement (mg/dl) ^b	0.096	Comparison	1,194	118.5		
			Background RH	376	116.7	-1.8 --	0.107
			Low RH	236	119.5	1.0 --	0.399
			High RH	240	122.3	3.8 --	0.003
			Low plus High RH	476	120.9	2.4 --	0.013
13-55	C4 Complement (mg/dl) ^b	0.012	Comparison	1,194	25.90		
			Background RH	376	25.41	-0.49 --	0.109
			Low RH	236	26.03	0.13 --	0.733
			High RH	240	25.91	0.01 --	0.986
			Low plus High RH	476	25.97	0.07 --	0.816

Table G-3. Summary of Unadjusted Results for Continuous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter (Units)	R ²	Dioxin Category	n	Adj. Mean ^a	Difference of Means vs. Comparisons (95% C.I.)	p-Value
13-57	Haptoglobin (mg/dl) ^d	0.006	Comparison	1,194	126.7		
			Background RH	376	131.4	4.7 --	0.210
			Low RH	236	134.5	7.8 --	0.078
			High RH	240	141.7	15.0 --	0.001
			Low plus High RH	476	138.1	11.4 --	0.001
13-59	Transferrin (mg/dl) ^b	0.004	Comparison	1,194	249.5		
			Background RH	376	250.9	1.4 --	0.480
			Low RH	236	251.9	2.4 --	0.328
			High RH	240	255.9	6.4 --	0.010
			Low plus High RH	476	253.9	4.4 --	0.019
14-7	Systolic Blood Pressure (mm Hg) ^b	0.040	Comparison	1,195	125.5		
			Background RH	376	125.4	-0.1 --	0.935
			Low RH	233	125.9	0.4 --	0.730
			High RH	243	123.4	-2.1 --	0.079
			Low plus High RH	476	124.6	-0.9 --	0.346
14-9	Diastolic Blood Pressure (mm Hg) ^d	0.014	Comparison	1,195	74.57		
			Background RH	376	74.14	-0.43 --	0.432
			Low RH	233	74.19	-0.38 --	0.569
			High RH	243	75.65	1.08 --	0.099
			Low plus High RH	476	74.93	0.36 --	0.468
15-3	RBC Count (million/mm ³)	0.011	Comparison	1,211	4.96		
			Background RH	381	4.95	-0.01 (-0.06,0.03)	0.540
			Low RH	239	4.92	-0.05 (-0.01,0.01)	0.094
			High RH	239	4.98	0.02 (-0.04,0.07)	0.506
			Low plus High RH	478	4.95	-0.01 (-0.05,0.03)	0.510
15-5	WBC Count (thousand/mm ³) ^b	0.010	Comparison	1,211	6.64		
			Background RH	381	6.57	-0.07 --	0.493
			Low RH	239	6.56	-0.08 --	0.491
			High RH	239	6.92	0.28 --	0.029
			Low plus High RH	478	6.73	0.09 --	0.324

Table G-3. Summary of Unadjusted Results for Continuous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter (Units)	R ²	Dioxin Category	n	Adj. Mean ^a	Difference of Means vs. Comparisons (95% C.I.)	p-Value
15-7	Hemoglobin (gm/dl)	0.002	Comparison	1,211	15.33		
			Background RH	381	15.30	-0.03 (-0.14,0.09)	0.641
			Low RH	239	15.26	-0.07 (-0.21,0.07)	0.319
			High RH	239	15.46	0.12 (-0.01,0.26)	0.080
			Low plus High RH	478	15.36	0.03 (-0.08,0.13)	0.617
15-9	Hematocrit (percent)	0.003	Comparison	1,211	45.61		
			Background RH	381	45.56	-0.06 (-0.41,0.30)	0.756
			Low RH	239	45.30	-0.31 (-0.74,0.12)	0.153
			High RH	239	45.93	0.32 (-0.11,0.75)	0.147
			Low plus High RH	478	45.61	0.00 (-0.32,0.33)	0.987
15-11	Platelet Count (thousand/mm ³) ^d	0.016	Comparison	1,205	204.6		
			Background RH	379	202.1	-2.5 --	0.374
			Low RH	238	204.6	-0.1 --	0.987
			High RH	238	217.2	12.6 --	<0.001
			Low plus High RH	476	210.8	6.2 --	0.017
15-13	Prothrombin Time (seconds) ^b	0.002	Comparison	987	10.49		
			Background RH	309	10.53	0.04 --	0.476
			Low RH	182	10.46	-0.03 --	0.667
			High RH	193	10.44	-0.05 --	0.411
			Low plus High RH	375	10.45	-0.04 --	0.409
15-16	Absolute Neutrophils (segs) (thousand/mm ³) ^b	0.007	Comparison	1,211	3.81		
			Background RH	381	3.75	-0.06 --	0.430
			Low RH	239	3.80	-0.01 --	0.906
			High RH	239	4.03	0.22 --	0.028
			Low plus High RH	478	3.91	0.10 --	0.172
15-17	Absolute Neutrophils (bands) (Nonzero Measurements) (thousand/mm ³) ^b	0.005	Comparison	1,002	0.189		
			Background RH	316	0.191	0.002 --	0.783
			Low RH	196	0.211	0.022 --	0.079
			High RH	201	0.209	0.020 --	0.113
			Low plus High RH	397	0.210	0.021 --	0.029

Table G-3. Summary of Unadjusted Results for Continuous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter (Units)	R ²	Dioxin Category	n	Adj. Mean ^a	Difference of Means vs. Comparisons (95% C.I.)	p-Value
15-19	Absolute Lymphocytes (thousand/mm ³) ^b	0.005	Comparison	1,211	1.75		
			Background RH	381	1.77	0.02 --	0.671
			Low RH	239	1.71	-0.04 --	0.383
			High RH	239	1.78	0.03 --	0.575
			Low plus High RH	478	1.74	-0.01 --	0.839
15-20	Absolute Monocytes (thousand/mm ³) ^d	0.011	Comparison	1,211	0.480		
			Background RH	381	0.464	-0.016 --	0.221
			Low RH	239	0.469	-0.011 --	0.480
			High RH	239	0.502	0.022 --	0.136
			Low plus High RH	478	0.486	0.006 --	0.606
15-21	Absolute Eosinophils (Nonzero Measurements) (thousand/mm ³) ^b	0.001	Comparison	1,064	0.161		
			Background RH	337	0.163	0.002 --	0.805
			Low RH	206	0.155	-0.006 --	0.513
			High RH	211	0.154	-0.007 --	0.434
			Low plus High RH	417	0.155	-0.006 --	0.346
15-23	Absolute Basophils (Nonzero Measurements) (thousand/mm ³) ^b	0.003	Comparison	562	0.080		
			Background RH	168	0.078	-0.002 --	0.410
			Low RH	92	0.076	-0.004 --	0.222
			High RH	109	0.080	0.000 --	0.930
			Low plus High RH	201	0.078	-0.002 --	0.482
16-6	Time to Diabetes Onset (years)	--	Comparison	1,195	--		
			Background RH	379	--	--	0.013
			Low RH	235	--	--	0.254
			High RH	240	--	--	0.233
			Low plus High RH	475	--	--	0.134
16-9	TSH (μ IU/ml) ^b	0.002	Comparison	1,161	1.80		
			Background RH	367	1.91	0.11 --	0.129
			Low RH	233	1.89	0.09 --	0.273
			High RH	234	1.81	0.01 --	0.942
			Low plus High RH	467	1.85	0.05 --	0.446

Table G-3. Summary of Unadjusted Results for Continuous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter (Units)	R ²	Dioxin Category	n	Adj. Mean ^a	Difference of Means vs. Comparisons (95% C.I.)	p-Value
16-11	Thyroxine ($\mu\text{g}/\text{dl}$) ^d	0.004	Comparison	1,161	7.04		
			Background RH	367	6.95	-0.09 --	0.221
			Low RH	233	7.13	0.09 --	0.344
			High RH	234	7.23	0.19 --	0.053
			Low plus High RH	467	7.18	0.14 --	0.059
16-14	Fasting Glucose (mg/dl) ^b	0.089	Comparison	1,212	101.6		
			Background RH	381	100.3	-1.3 --	0.298
			Low RH	238	100.8	-0.8 --	0.618
			High RH	242	103.9	2.3 --	0.121
			Low plus High RH	480	102.4	0.8 --	0.485
16-16	2-Hour Postprandial Glucose (mg/dl) ^b	0.066	Comparison	996	104.7		
			Background RH	342	105.3	0.6 --	0.718
			Low RH	186	107.1	2.4 --	0.296
			High RH	183	104.5	-0.2 --	0.942
			Low plus High RH	369	105.8	1.1 --	0.521
16-20	Serum Insulin ($\mu\text{IU}/\text{ml}$) ^b	0.122	Comparison	996	47.35		
			Background RH	342	45.29	-2.06 --	0.393
			Low RH	186	51.97	4.62 --	0.157
			High RH	183	52.74	5.36 --	0.105
			Low plus High RH	369	52.35	5.00 --	0.046
16-22	α -1-C Hemoglobin (percent) ^b	0.087	Comparison	1,212	6.48		
			Background RH	381	6.38	-0.10 --	0.116
			Low RH	238	6.44	-0.04 --	0.588
			High RH	242	6.70	0.22 --	0.005
			Low plus High RH	480	6.57	0.09 --	0.138
16-24	Total Testosterone (ng/dl) ^d	0.121	Comparison	1,189	423.0		
			Background RH	372	429.8	6.8 --	0.499
			Low RH	234	404.6	-18.4 --	0.118
			High RH	238	429.4	6.4 --	0.592
			Low plus High RH	472	417.0	-6.0 --	0.508

Table G-3. Summary of Unadjusted Results for Continuous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter (Units)	R ²	Dioxin Category	n	Adj. Mean ^a	Difference of Means vs. Comparisons (95% C.I.)	p-Value
16-26	Free Testosterone (pg/ml) ^d	0.085	Comparison	1,189	13.95		
			Background RH	372	13.85	-0.10 --	0.703
			Low RH	234	13.23	-0.72 --	0.022
			High RH	238	14.85	0.90 --	0.006
			Low plus High RH	472	14.03	0.08 --	0.745
16-28	Estradiol (pg/ml) ^d	0.003	Comparison	1,213	40.68		
			Background RH	381	39.71	-0.97 --	0.323
			Low RH	239	39.58	-1.10 --	0.350
			High RH	243	41.43	0.75 --	0.523
			Low plus High RH	482	40.51	-0.17 --	0.852
16-30	LH (mIU/ml) ^b	0.003	Comparison	1,213	3.85		
			Background RH	381	4.01	0.16 --	0.264
			Low RH	239	3.83	-0.02 --	0.900
			High RH	243	3.74	-0.11 --	0.504
			Low plus High RH	482	3.78	-0.07 --	0.601
16-32	FSH (mIU/ml) ^b	0.002	Comparison	1,213	5.97		
			Background RH	381	6.21	0.24 --	0.283
			Low RH	239	6.28	0.31 --	0.258
			High RH	243	5.66	-0.31 --	0.229
			Low plus High RH	482	5.96	-0.01 --	0.955
17-4	CD3+ Cells (T Cells) (cells/mm ³) ^b	0.005	Comparison	440	1,252.1		
			Background RH	142	1,220.8	-31.3 --	0.490
			Low RH	84	1,225.9	-26.2 --	0.636
			High RH	91	1,242.7	-9.4 --	0.862
			Low plus High RH	175	1,234.6	-17.5 --	0.676
17-5	CD4+ Cells (Helper T Cells) (cells/mm ³) ^b	0.006	Comparison	440	854.9		
			Background RH	142	830.4	-24.5 --	0.421
			Low RH	84	835.6	-19.3 --	0.605
			High RH	91	862.2	7.3 --	0.842
			Low plus High RH	175	849.3	-5.6 --	0.844

Table G-3. Summary of Unadjusted Results for Continuous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter (Units)	R ²	Dioxin Category	n	Adj. Mean ^a	Difference of Means vs. Comparisons (95% C.I.)	p-Value
17-6	CD8+ Cells (Suppressor T Cells) (cells/mm ³) ^b	0.002	Comparison	440	584.1		
			Background RH	142	565.3	-18.8 --	0.479
			Low RH	84	571.8	-12.3 --	0.706
			High RH	91	552.4	-31.7 --	0.307
			Low plus High RH	175	561.6	-22.5 --	0.355
17-7	CD16+56+ Cells (Natural Killer Cells) (cells/mm ³) ^b	0.018	Comparison	440	275.4		
			Background RH	142	258.9	-16.5 --	0.192
			Low RH	84	281.1	5.7 --	0.726
			High RH	91	243.3	-32.1 --	0.028
			Low plus High RH	175	260.7	-14.7 --	0.209
17-8	CD20+ Cells (B Cells) (cells/mm ³) ^b	0.005	Comparison	440	185.0		
			Background RH	142	183.9	-1.1 --	0.918
			Low RH	83	166.7	-18.3 --	0.141
			High RH	91	195.5	10.5 --	0.419
			Low plus High RH	174	181.1	-3.9 --	0.694
17-9	CD3+CD4+ Cells (Helper T Cells) (cells/mm ³) ^b	0.005	Comparison	440	778.6		
			Background RH	142	753.7	-24.9 --	0.395
			Low RH	84	761.5	-17.1 --	0.632
			High RH	91	790.8	12.2 --	0.731
			Low plus High RH	175	776.6	-2.0 --	0.940
17-10	Absolute Lymphocytes (cells/mm ³) ^b	0.005	Comparison	1,164	1,775.7		
			Background RH	371	1,786.3	10.6 --	0.777
			Low RH	222	1,752.0	-23.7 --	0.598
			High RH	231	1,794.5	18.8 --	0.676
			Low plus High RH	453	1,773.5	-2.2 --	0.959
17-11	IgA (mg/dl) ^b	0.004	Comparison	1,164	233.6		
			Background RH	371	226.8	-6.8 --	0.297
			Low RH	222	232.3	-1.3 --	0.868
			High RH	231	240.9	7.3 --	0.373
			Low plus High RH	453	236.6	3.0 --	0.629

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Table G-3. Summary of Unadjusted Results for Continuous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter (Units)	R ²	Dioxin Category	n	Adj. Mean ^a	Difference of Means vs. Comparisons (95% C.I.)	p-Value
17-12	IgG (mg/dl) ^b	0.002	Comparison	1,164	1,048.1		
			Background RH	371	1,031.9	-16.2 --	0.254
			Low RH	222	1,041.7	-6.4 --	0.713
			High RH	231	1,039.6	-8.5 --	0.621
			Low plus High RH	453	1,040.7	-7.4 --	0.572
17-13	IgM (mg/dl) ^b	0.004	Comparison	1,164	98.2		
			Background RH	371	96.1	-2.1 --	0.487
			Low RH	222	95.8	-2.4 --	0.525
			High RH	231	96.4	-1.8 --	0.619
			Low plus High RH	453	96.1	-2.1 --	0.459
18-8	FVC (percent of predicted)	0.039	Comparison	1,211	99.14		
			Background RH	381	99.33	0.19 (-1.50,1.88)	0.825
			Low RH	238	98.34	-0.80 (-2.83,1.23)	0.439
			High RH	243	99.79	0.66 (-1.36,2.67)	0.523
			Low plus High RH	481	99.07	-0.06 (-1.61,1.48)	0.935
18-9	FEV ₁ (percent of predicted)	0.003	Comparison	1,211	94.38		
			Background RH	381	93.94	-0.44 (-2.46,1.57)	0.668
			Low RH	238	92.89	-1.48 (-3.90,0.93)	0.229
			High RH	243	95.50	1.12 (-1.28,3.53)	0.360
			Low plus High RH	481	94.21	-0.17 (-2.01,1.67)	0.859
18-10	Observed FEV ₁ to Observed FVC ^c	0.034	Comparison	1,211	0.763		
			Background RH	381	0.757	-0.006 --	0.192
			Low RH	238	0.757	-0.006 --	0.341
			High RH	243	0.770	0.007 --	0.164
			Low plus High RH	481	0.764	0.001 --	0.764

^a Adjusted for percent body fat at the time of the blood measurement for dioxin.

^b Means transformed from natural logarithm scale; difference of means after transformation to original scale; confidence interval not given because analysis was performed on natural logarithm scale; p-value based on difference of means on natural logarithm scale.

Table G-3. Summary of Unadjusted Results for Continuous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

^c Means transformed from natural logarithm (clinical parameter + 0.1) scale; difference of means after transformation to original scale; confidence interval not given because analysis was performed on natural logarithm (clinical parameter + 0.1) scale; p-value based on difference of means on natural logarithm (clinical parameter + 0.1) scale.

^d Means transformed from square root scale; difference of means after transformation to original scale; confidence interval not given because analysis was performed on square root scale; p-value based on difference of means on square root scale.

^e Means transformed from natural logarithm (1 – clinical parameter) scale; difference of means after transformation to original scale; confidence interval not given because analysis was performed on natural logarithm (1 – clinical parameter) scale; p-value based on difference of means on natural logarithm (1 – clinical parameter) scale.

Note: RH = Ranch Hand.

Comparison: 1987 Dioxin \leq 10 ppt.

Background: (Ranch Hand): 1987 Dioxin \leq 10 ppt.

Low (Ranch Hand): 1987 Dioxin $>$ 10 ppt, 10 ppt $<$ Initial Dioxin \leq 94 ppt.

High (Ranch Hand): 1987 Dioxin $>$ 10 ppt, Initial Dioxin $>$ 94 ppt.

Table G-4. Summary of Unadjusted Results for Continuous Variables – Model 4 (Ranch Hands: Log₂ (1987 Dioxin + 1))

Table Ref.	Clinical Parameter (Units)	R ²	Slope (Standard Error)	p-Value
9-6	Body Fat (percent) ^a	0.072	0.046 (0.006)	<0.001
9-8	Erythrocyte Sedimentation Rate (mm/hr) ^b	0.009	0.063 (0.022)	0.004
10-35	PSA (ng/ml) ^a	0.005	-0.037 (0.018)	0.043
13-11	AST (U/l) ^a	0.005	0.017 (0.008)	0.033
13-13	ALT (U/l) ^a	0.023	0.029 (0.007)	<0.001
13-15	GGT (U/l) ^a	0.012	0.040 (0.013)	0.002
13-17	Alkaline Phosphatase (U/l) ^a	<0.001	-0.004 (0.006)	0.555
13-19	Total Bilirubin (mg/dl) ^a	0.001	-0.007 (0.011)	0.499
13-22	Lactic Dehydrogenase (U/l) ^a	0.002	0.005 (0.004)	0.211
13-24	Cholesterol (mg/dl) ^c	0.008	0.077 (0.030)	0.009
13-26	HDL Cholesterol (mg/dl) ^a	0.016	-0.023 (0.006)	<0.001
13-28	Cholesterol-HDL Ratio ^a	0.030	0.033 (0.007)	<0.001
13-30	Triglycerides (mg/dl) ^a	0.028	0.072 (0.015)	<0.001
13-32	Creatine Phosphokinase (U/l) ^a	0.004	0.024 (0.014)	0.084
13-34	Serum Amylase (U/l) ^a	0.005	-0.019 (0.009)	0.035
13-41	Prealbumin (mg/dl)	<0.001	-0.047 (0.124)	0.704
13-43	Albumin (mg/dl)	<0.001	-2.471 (7.678)	0.748
13-45	α-1-Acid Glycoprotein (mg/dl) ^a	0.001	0.005 (0.005)	0.336
13-47	α-1-Antitrypsin (mg/dl) ^c	0.003	0.040 (0.025)	0.109
13-49	α-2-Macroglobulin (mg/dl) ^a	<0.001	-0.004 (0.006)	0.522
13-51	Apolipoprotein B (mg/dl) ^c	0.011	0.083 (0.027)	0.002
13-53	C3 Complement (mg/dl) ^a	0.040	0.021 (0.004)	<0.001
13-55	C4 Complement (mg/dl) ^a	0.004	0.009 (0.005)	0.070
13-57	Haptoglobin (mg/dl) ^c	0.002	0.074 (0.065)	0.254
13-59	Transferrin (mg/dl) ^a	0.004	0.005 (0.003)	0.082
14-7	Systolic Blood Pressure (mm Hg) ^a	<0.001	0.001 (0.003)	0.693
14-9	Diastolic Blood Pressure (mm Hg) ^c	0.007	0.031 (0.013)	0.014
15-3	RBC Count (million/mm ³)	0.003	0.013 (0.009)	0.136
15-5	WBC Count (thousand/mm ³) ^a	0.007	0.015 (0.006)	0.013
15-7	Hemoglobin (gm/dl)	0.003	0.035 (0.023)	0.133
15-9	Hematocrit (percent)	0.001	0.077 (0.071)	0.278
15-11	Platelet Count (thousand/mm ³) ^c	0.009	0.109 (0.039)	0.005
15-13	Prothrombin Time (seconds) ^a	0.002	-0.002 (0.002)	0.220
15-16	Absolute Neutrophils (segs) (thousand/mm ³) ^a	0.007	0.020 (0.008)	0.017
15-17	Absolute Neutrophils (bands) (Nonzero Measurements) (thousand/mm ³) ^a	0.001	0.015 (0.021)	0.482
15-19	Absolute Lymphocytes (thousand/mm ³) ^a	0.002	0.009 (0.008)	0.239
15-20	Absolute Monocytes (thousand/mm ³) ^c	0.004	0.007 (0.004)	0.059
15-21	Absolute Eosinophils (Nonzero Measurements) (thousand/mm ³) ^a	0.001	-0.017 (0.017)	0.330
15-23	Absolute Basophils (Nonzero Measurements) (thousand/mm ³) ^a	<0.001	0.006 (0.014)	0.674
16-6	Time to Diabetes Onset (years) ^d	--	-0.098 (0.021)	<0.001
16-9	TSH (μIU/ml) ^a	<0.001	-0.000 (0.015)	0.977
16-11	Thyroxine (μg/dl) ^c	0.008	0.015 (0.006)	0.009
16-14	Fasting Glucose (mg/dl) ^a	0.019	0.020 (0.005)	<0.001

**Table G-4. Summary of Unadjusted Results for Continuous Variables – Model 4
(Ranch Hands: Log₂ (1987 Dioxin + 1)) (Continued)**

Table Ref.	Clinical Parameter (Units)	R ²	Slope (Standard Error)	p-Value
16-16	2-Hour Postprandial Glucose (mg/dl) ^a	0.003	0.011 (0.007)	0.115
16-20	Serum Insulin (μ IU/ml) ^a	0.025	0.100 (0.023)	<0.001
16-22	α -1-C Hemoglobin (percent) ^a	0.033	0.021 (0.004)	<0.001
16-24	Total Testosterone (ng/dl) ^c	0.010	-0.296 (0.101)	0.003
16-26	Free Testosterone (pg/ml) ^c	0.001	-0.010 (0.015)	0.489
16-28	Estradiol (pg/ml) ^c	0.002	0.039 (0.031)	0.212
16-30	LH (mIU/ml) ^a	0.005	-0.030 (0.015)	0.042
16-32	FSH (mIU/ml) ^a	0.003	-0.024 (0.015)	0.105
17-4	CD3+ Cells (T Cells) (cells/mm ³) ^a	0.003	0.015 (0.015)	0.316
17-5	CD4+ Cells (Helper T Cells) (cells/mm ³) ^a	0.004	0.017 (0.015)	0.255
17-6	CD8+ Cells (Suppressor T Cells) (cells/mm ³) ^a	0.001	0.009 (0.019)	0.640
17-7	CD16+56+ Cells (Natural Killer Cells) (cells/mm ³) ^a	<0.001	0.006 (0.021)	0.772
17-8	CD20+ Cells (B Cells) (cells/mm ³) ^a	0.004	0.026 (0.023)	0.260
17-9	CD3+CD4+ Cells (Helper T Cells) (cells/mm ³) ^a	0.005	0.019 (0.016)	0.228
17-10	Absolute Lymphocytes (cells/mm ³) ^a	0.002	0.010 (0.008)	0.222
17-11	IgA (mg/dl) ^a	0.005	0.022 (0.011)	0.051
17-12	IgG (mg/dl) ^a	<0.001	0.002 (0.005)	0.652
17-13	IgM (mg/dl) ^a	<0.001	-0.001 (0.012)	0.937
18-8	FVC (percent of predicted)	0.001	-0.312 (0.338)	0.356
18-9	FEV ₁ (percent of predicted)	0.002	0.496 (0.402)	0.217
18-10	Observed FEV ₁ to Observed FVC ^e	0.018	-0.031 (0.008)	<0.001

^a Slope and standard error based on natural logarithm of clinical parameter versus log₂ (initial dioxin).

^b Slope and standard error based on natural logarithm of (clinical parameter + 0.1) versus log₂ (initial dioxin).

^c Slope and standard error based on square root of clinical parameter versus log₂ (initial dioxin).

^d Slope and standard error based on time to diabetes onset versus log₂ (initial dioxin) under a censored Weibull distribution.

^e Slope and standard error based on natural logarithm of (1 – clinical parameter) versus log₂ (initial dioxin).

--: R-squared not presented because analysis was based on a censored Weibull distribution.

Table G-5. Summary of Unadjusted Results for Dichotomous Variables – Model 1 (Ranch Hands vs. Comparisons)

Table Ref.	Clinical Parameter	Occupational Category	Number (%) Abnormal		Est. Relative Risk (95% C.I.)	p-Value
			RH	C		
9-3	Self-perception of Health	All	124 (14.3)	130 (10.4)	1.44 (1.10,1.87)	0.007
		Officer	30 (8.8)	34 (6.9)	1.31 (0.78,2.18)	0.308
		Enlisted Flyer	26 (17.2)	23 (12.3)	1.48 (0.81,2.72)	0.203
		Enlisted Groundcrew	68 (18.0)	73 (12.8)	1.50 (1.05,2.15)	0.028
9-4	Appearance of Illness or Distress	All	15 (1.7)	14 (1.1)	1.55 (0.74,3.23)	0.242
		Officer	3 (0.9)	4 (0.8)	1.09 (0.24,4.89)	0.913
		Enlisted Flyer	3 (2.0)	2 (1.1)	1.87 (0.31,11.37)	0.494
		Enlisted Groundcrew	9 (2.4)	8 (1.4)	1.71 (0.66,4.48)	0.272
9-5	Relative Age Appearance	All	90 (10.3)	104 (8.3)	1.27 (0.95,1.71)	0.112
		Officer	22 (6.5)	25 (5.1)	1.29 (0.72,2.33)	0.392
		Enlisted Flyer	22 (14.6)	21 (11.2)	1.35 (0.71,2.56)	0.361
		Enlisted Groundcrew	46 (12.2)	58 (10.2)	1.22 (0.81,1.84)	0.337
9-7	Body Fat	All	244 (28.1)	376 (30.1)	0.91 (0.75,1.10)	0.316
		Officer	88 (25.8)	123 (24.9)	1.05 (0.76,1.44)	0.767
		Enlisted Flyer	37 (24.5)	58 (31.0)	0.72 (0.45,1.17)	0.186
		Enlisted Groundcrew	119 (31.5)	195 (34.2)	0.88 (0.67,1.17)	0.382
9-9	Erythrocyte Sedimentation Rate	All	72 (8.3)	88 (7.0)	1.19 (0.86,1.65)	0.289
		Officer	20 (5.9)	34 (6.9)	0.84 (0.48,1.49)	0.557
		Enlisted Flyer	17 (11.3)	14 (7.5)	1.57 (0.75,3.29)	0.235
		Enlisted Groundcrew	35 (9.3)	40 (7.0)	1.35 (0.84,2.17)	0.212
10-3	Skin Neoplasms	All	325 (40.4)	402 (34.4)	1.29 (1.07,1.55)	0.007
		Officer	150 (45.6)	183 (38.1)	1.36 (1.02,1.81)	0.034
		Enlisted Flyer	56 (40.0)	50 (28.9)	1.64 (1.02,2.63)	0.040
		Enlisted Groundcrew	119 (35.4)	169 (32.8)	1.12 (0.84,1.50)	0.433
10-4	Malignant Skin Neoplasms	All	144 (17.9)	187 (16.0)	1.14 (0.90,1.45)	0.274
		Officer	77 (23.4)	95 (19.8)	1.24 (0.88,1.74)	0.218
		Enlisted Flyer	29 (20.7)	22 (12.7)	1.79 (0.98,3.29)	0.059
		Enlisted Groundcrew	38 (11.3)	70 (13.6)	0.81 (0.53,1.24)	0.329
10-5	Benign Skin Neoplasms	All	225 (26.2)	264 (21.3)	1.31 (1.07,1.61)	0.010
		Officer	96 (28.6)	107 (22.0)	1.42 (1.03,1.96)	0.031
		Enlisted Flyer	34 (22.7)	32 (17.3)	1.40 (0.82,2.40)	0.220
		Enlisted Groundcrew	95 (25.4)	125 (22.0)	1.21 (0.89,1.64)	0.229
10-6	Skin Neoplasms of Uncertain Behavior or Unspecified Nature	All	7 (0.9)	8 (0.7)	1.27 (0.46,3.52)	0.645
		Officer	0 (0.0)	3 (0.6)	--	0.397 ^a
		Enlisted Flyer	0 (0.0)	1 (0.6)	--	0.999 ^a
		Enlisted Groundcrew	7 (2.1)	4 (0.8)	2.72 (0.79,9.36)	0.113
10-7	Basal Cell Carcinoma	All	121 (15.0)	155 (13.3)	1.16 (0.89,1.49)	0.269
		Officer	67 (20.4)	80 (16.7)	1.28 (0.89,1.83)	0.181
		Enlisted Flyer	26 (18.6)	19 (11.0)	1.85 (0.98,3.50)	0.060
		Enlisted Groundcrew	28 (8.3)	56 (10.9)	0.75 (0.46,1.20)	0.226

**Table G-5. Summary of Unadjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Number (%) Abnormal		Est. Relative Risk (95% C.I.)	p-Value
			RH	C		
10-8	Basal Cell Carcinoma (Ear, Face, Head, and Neck)	All	93 (11.6)	120 (10.3)	1.14 (0.86,1.52)	0.370
		Officer	49 (14.9)	60 (12.5)	1.23 (0.82,1.84)	0.328
		Enlisted Flyer	22 (15.7)	17 (9.8)	1.71 (0.87,3.37)	0.120
		Enlisted Groundcrew	22 (6.6)	43 (8.4)	0.77 (0.45,1.31)	0.334
10-9	Basal Cell Carcinoma (Trunk)	All	40 (5.0)	47 (4.0)	1.25 (0.81,1.92)	0.318
		Officer	29 (8.8)	29 (6.0)	1.50 (0.88,2.57)	0.135
		Enlisted Flyer	6 (4.3)	3 (1.7)	2.54 (0.62,10.33)	0.194
		Enlisted Groundcrew	5 (1.5)	15 (2.9)	0.50 (0.18,1.40)	0.188
10-10	Basal Cell Carcinoma (Upper Extremities)	All	21 (2.6)	38 (3.3)	0.80 (0.46,1.37)	0.405
		Officer	17 (5.2)	24 (5.0)	1.04 (0.55,1.96)	0.915
		Enlisted Flyer	1 (0.7)	2 (1.2)	0.62 (0.06,6.85)	0.693
		Enlisted Groundcrew	3 (0.9)	12 (2.3)	0.38 (0.11,1.35)	0.134
10-11	Basal Cell Carcinoma (Lower Extremities)	All	5 (0.6)	5 (0.4)	1.45 (0.42,5.04)	0.556
		Officer	4 (1.2)	3 (0.6)	1.96 (0.44,8.80)	0.381
		Enlisted Flyer	0 (0.0)	0 (0.0)	--	--
		Enlisted Groundcrew	1 (0.3)	2 (0.4)	0.77 (0.07,8.48)	0.828
10-12	Squamous Cell Carcinoma	All	20 (2.5)	22 (1.9)	1.33 (0.72,2.45)	0.367
		Officer	11 (3.3)	16 (3.3)	1.00 (0.46,2.19)	0.994
		Enlisted Flyer	3 (2.1)	2 (1.2)	1.87 (0.31,11.36)	0.495
		Enlisted Groundcrew	6 (1.8)	4 (0.8)	2.32 (0.65,8.29)	0.194
10-13	Nonmelanoma	All	134 (16.7)	176 (15.1)	1.13 (0.88,1.44)	0.345
		Officer	73 (22.2)	89 (18.5)	1.25 (0.89,1.77)	0.203
		Enlisted Flyer	29 (20.7)	21 (12.1)	1.89 (1.02,3.49)	0.042
		Enlisted Groundcrew	32 (9.5)	66 (12.8)	0.72 (0.46,1.12)	0.143
10-14	Melanoma	All	16 (2.0)	13 (1.1)	1.80 (0.86,3.77)	0.117
		Officer	9 (2.7)	7 (1.5)	1.90 (0.70,5.16)	0.207
		Enlisted Flyer	0 (0.0)	1 (0.6)	--	0.999 ^a
		Enlisted Groundcrew	7 (2.1)	5 (1.0)	2.17 (0.68,6.90)	0.189
10-15	Systemic Neoplasms (All Sites Combined)	All	267 (31.2)	370 (29.8)	1.07 (0.89,1.29)	0.482
		Officer	110 (33.1)	168 (34.4)	0.95 (0.70,1.27)	0.716
		Enlisted Flyer	49 (33.3)	55 (29.4)	1.20 (0.75,1.91)	0.443
		Enlisted Groundcrew	108 (28.7)	147 (26.0)	1.15 (0.86,1.54)	0.352
10-16	Malignant Systemic Neoplasms	All	67 (7.8)	75 (6.0)	1.32 (0.94,1.86)	0.112
		Officer	32 (9.6)	39 (7.9)	1.23 (0.76,2.01)	0.403
		Enlisted Flyer	18 (12.1)	11 (5.9)	2.20 (1.00,4.81)	0.049
		Enlisted Groundcrew	17 (4.5)	25 (4.4)	1.03 (0.55,1.93)	0.937
10-17	Benign Systemic Neoplasms	All	217 (25.4)	299 (24.1)	1.07 (0.88,1.31)	0.495
		Officer	82 (24.7)	130 (26.6)	0.91 (0.66,1.25)	0.545
		Enlisted Flyer	40 (27.2)	47 (25.1)	1.11 (0.68,1.82)	0.668
		Enlisted Groundcrew	95 (25.3)	122 (21.6)	1.23 (0.91,1.67)	0.186

**Table G-5. Summary of Unadjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Number (%) Abnormal		Est. Relative Risk (95% C.I.)	p-Value
			RH	C		
10-18	Systemic Neoplasms of Uncertain Behavior or Unspecified Nature	All	16 (1.9)	25 (2.0)	0.93 (0.49,1.75)	0.814
		Officer	11 (3.3)	13 (2.6)	1.26 (0.56,2.84)	0.583
		Enlisted Flyer	1 (0.7)	2 (1.1)	0.63 (0.06,6.96)	0.702
		Enlisted Groundcrew	4 (1.1)	10 (1.8)	0.60 (0.19,1.92)	0.388
10-19	Malignant Systemic Neoplasms (Eye, Ear, Face, Head, and Neck)	All	9 (1.1)	12 (1.0)	1.09 (0.46,2.60)	0.848
		Officer	6 (1.8)	4 (0.8)	2.23 (0.63,7.98)	0.216
		Enlisted Flyer	1 (0.7)	3 (1.6)	0.41 (0.04,4.03)	0.448
		Enlisted Groundcrew	2 (0.5)	5 (0.9)	0.60 (0.12,3.11)	0.543
10-20	Malignant Systemic Neoplasms (Oral Cavity, Pharynx, and Larynx)	All	4 (0.5)	7 (0.6)	0.83 (0.24,2.84)	0.762
		Officer	2 (0.6)	2 (0.4)	1.48 (0.21,10.54)	0.697
		Enlisted Flyer	1 (0.7)	2 (1.1)	0.63 (0.06,6.96)	0.702
		Enlisted Groundcrew	1 (0.3)	3 (0.5)	0.50 (0.05,4.83)	0.550
10-21	Malignant Systemic Neoplasms (Thymus, Heart, and Mediastinum)	All	2 (0.2)	0 (0.0)	--	0.325 ^a
		Officer	1 (0.3)	0 (0.0)	--	0.845 ^a
		Enlisted Flyer	0 (0.0)	0 (0.0)	--	--
		Enlisted Groundcrew	1 (0.3)	0 (0.0)	--	0.836 ^a
10-22	Malignant Systemic Neoplasms (Thyroid Gland)	All	2 (0.2)	2 (0.2)	1.45 (0.20,10.33)	0.710
		Officer	2 (0.6)	1 (0.2)	2.96 (0.27,32.79)	0.376
		Enlisted Flyer	0 (0.0)	0 (0.0)	--	--
		Enlisted Groundcrew	0 (0.0)	1 (0.2)	--	0.999 ^a
10-23	Malignant Systemic Neoplasms (Bronchus and Lung)	All	10 (1.2)	3 (0.2)	4.88 (1.34,17.79)	0.008
		Officer	5 (1.5)	2 (0.4)	3.73 (0.72,19.33)	0.117
		Enlisted Flyer	3 (2.0)	1 (0.5)	3.82 (0.39,37.13)	0.248
		Enlisted Groundcrew	2 (0.5)	0 (0.0)	--	0.310 ^a
10-24	Malignant Systemic Neoplasms (Liver)	All	2 (0.2)	2 (0.2)	1.45 (0.20,10.33)	0.710
		Officer	0 (0.0)	1 (0.2)	--	0.999 ^a
		Enlisted Flyer	1 (0.7)	0 (0.0)	--	0.909 ^a
		Enlisted Groundcrew	1 (0.3)	1 (0.2)	1.51 (0.09,24.18)	0.772
10-25	Malignant Systemic Neoplasms (Colon and Rectum)	All	7 (0.8)	8 (0.6)	1.27 (0.46,3.52)	0.645
		Officer	3 (0.9)	2 (0.4)	2.22 (0.37,13.38)	0.383
		Enlisted Flyer	2 (1.3)	2 (1.1)	1.26 (0.18,9.04)	0.819
		Enlisted Groundcrew	2 (0.5)	4 (0.7)	0.75 (0.14,4.13)	0.743
10-26	Malignant Systemic Neoplasms (Kidney and Bladder)	All	11 (1.3)	6 (0.5)	2.68 (0.99,7.28)	0.046
		Officer	5 (1.5)	5 (1.0)	1.48 (0.43,5.16)	0.537
		Enlisted Flyer	3 (2.0)	0 (0.0)	--	0.172 ^a
		Enlisted Groundcrew	3 (0.8)	1 (0.2)	4.55 (0.47,43.89)	0.190
10-27	Malignant Systemic Neoplasms (Prostate)	All	26 (3.0)	39 (3.1)	0.97 (0.58,1.60)	0.893
		Officer	13 (3.9)	25 (5.1)	0.76 (0.38,1.50)	0.427
		Enlisted Flyer	7 (4.7)	4 (2.1)	2.26 (0.65,7.86)	0.201
		Enlisted Groundcrew	6 (1.6)	10 (1.8)	0.90 (0.33,2.50)	0.844

**Table G-5. Summary of Unadjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Number (%) Abnormal		Est. Relative Risk (95% C.I.)	p-Value
			RH	C		
10-28	Malignant Systemic Neoplasms (Testicles)	All	3 (0.4)	0 (0.0)	--	0.134 ^a
		Officer	1 (0.3)	0 (0.0)	--	0.845 ^a
		Enlisted Flyer	1 (0.7)	0 (0.0)	--	0.909 ^a
		Enlisted Groundcrew	1 (0.3)	0 (0.0)	--	0.836 ^a
10-29	Malignant Systemic Neoplasms (Connective and Other Soft Tissues)	All	1 (0.1)	2 (0.2)	0.73 (0.07,8.01)	0.790
		Officer	0 (0.0)	0 (0.0)	--	--
		Enlisted Flyer	1 (0.7)	0 (0.0)	--	0.909 ^a
		Enlisted Groundcrew	0 (0.0)	2 (0.4)	--	0.667 ^a
10-30	Hodgkin's Disease	All	1 (0.1)	3 (0.2)	0.48 (0.05,4.65)	0.507
		Officer	1 (0.3)	2 (0.4)	0.74 (0.07,8.16)	0.803
		Enlisted Flyer	0 (0.0)	0 (0.0)	--	--
		Enlisted Groundcrew	0 (0.0)	1 (0.2)	--	0.999 ^a
10-31	Non-Hodgkin's Lymphoma	All	1 (0.1)	3 (0.2)	0.48 (0.05,4.65)	0.507
		Officer	0 (0.0)	2 (0.4)	--	0.657 ^a
		Enlisted Flyer	0 (0.0)	0 (0.0)	--	--
		Enlisted Groundcrew	1 (0.3)	1 (0.2)	1.51 (0.09,24.18)	0.772
10-32	Other Malignant Systemic Neoplasms of Lymphoid and Histiocytic Tissue	All	2 (0.2)	4 (0.3)	0.72 (0.13,3.97)	0.706
		Officer	1 (0.3)	2 (0.4)	0.74 (0.07,8.16)	0.803
		Enlisted Flyer	0 (0.0)	1 (0.5)	--	0.999 ^a
		Enlisted Groundcrew	1 (0.3)	1 (0.2)	1.51 (0.09,24.18)	0.772
10-33	Malignant Skin and Systemic Neoplasms	All	186 (21.9)	234 (18.9)	1.20 (0.97,1.49)	0.099
		Officer	95 (28.8)	116 (23.8)	1.29 (0.94,1.77)	0.112
		Enlisted Flyer	39 (26.4)	31 (16.8)	1.78 (1.04,3.02)	0.034
		Enlisted Groundcrew	52 (13.9)	87 (15.4)	0.89 (0.62,1.29)	0.546
10-34	All Skin and Systemic Neoplasms	All	473 (55.8)	620 (50.4)	1.25 (1.05,1.49)	0.014
		Officer	202 (61.4)	266 (55.2)	1.29 (0.97,1.72)	0.079
		Enlisted Flyer	84 (57.5)	92 (49.7)	1.37 (0.88,2.12)	0.158
		Enlisted Groundcrew	187 (50.3)	262 (46.5)	1.17 (0.90,1.51)	0.253
10-36	PSA	All	54 (6.5)	73 (6.1)	1.07 (0.74,1.53)	0.730
		Officer	31 (9.7)	29 (6.3)	1.59 (0.94,2.69)	0.086
		Enlisted Flyer	10 (7.1)	15 (8.3)	0.84 (0.37,1.93)	0.681
		Enlisted Groundcrew	13 (3.5)	29 (5.3)	0.66 (0.34,1.29)	0.223
11-3	Inflammatory Diseases	All	7 (0.8)	1 (0.1)	10.11 (1.24,82.35)	0.006
		Officer	2 (0.6)	0 (0.0)	--	0.327 ^a
		Enlisted Flyer	2 (1.3)	0 (0.0)	--	0.391 ^a
		Enlisted Groundcrew	3 (0.8)	1 (0.2)	4.56 (0.47,44.05)	0.189
11-4	Hereditary and Degenerative Diseases	All	80 (9.2)	108 (8.7)	1.08 (0.79,1.46)	0.639
		Officer	30 (8.8)	37 (7.5)	1.19 (0.72,1.97)	0.492
		Enlisted Flyer	19 (12.6)	19 (10.2)	1.27 (0.65,2.50)	0.484
		Enlisted Groundcrew	31 (8.3)	52 (9.1)	0.90 (0.56,1.43)	0.643

**Table G-5. Summary of Unadjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Number (%) Abnormal		Est. Relative Risk (95% C.I.)	p-Value
			RH	C		
11-5	Peripheral Disorders	All	188 (21.8)	241 (19.3)	1.16 (0.94,1.44)	0.169
		Officer	78 (23.0)	91 (18.5)	1.32 (0.94,1.85)	0.113
		Enlisted Flyer	36 (24.0)	44 (23.7)	1.02 (0.62,1.69)	0.941
		Enlisted Groundcrew	74 (19.8)	106 (18.6)	1.08 (0.77,1.50)	0.658
11-6	Other Neurological Disorders	All	173 (20.1)	211 (17.0)	1.23 (0.98,1.54)	0.070
		Officer	29 (8.6)	38 (7.7)	1.12 (0.68,1.86)	0.656
		Enlisted Flyer	46 (30.5)	45 (24.2)	1.37 (0.85,2.22)	0.198
		Enlisted Groundcrew	98 (26.3)	128 (22.6)	1.22 (0.90,1.65)	0.200
11-7	Smell	All	20 (2.3)	19 (1.5)	1.54 (0.81,2.89)	0.186
		Officer	5 (1.5)	10 (2.0)	0.73 (0.25,2.14)	0.562
		Enlisted Flyer	6 (4.0)	1 (0.5)	7.70 (0.92,64.65)	0.060
		Enlisted Groundcrew	9 (2.4)	8 (1.4)	1.73 (0.66,4.51)	0.266
11-8	Visual Fields	All	2 (0.2)	5 (0.4)	0.57 (0.11,2.97)	0.493
		Officer	0 (0.0)	1 (0.2)	--	0.999 ^a
		Enlisted Flyer	1 (0.7)	2 (1.1)	0.61 (0.06,6.83)	0.691
		Enlisted Groundcrew	1 (0.3)	2 (0.4)	0.76 (0.07,8.36)	0.819
11-9	Light Reaction	All	1 (0.1)	12 (1.0)	0.12 (0.02,0.92)	0.007
		Officer	0 (0.0)	3 (0.6)	--	0.399 ^a
		Enlisted Flyer	1 (0.7)	4 (2.1)	0.31 (0.03,2.76)	0.291
		Enlisted Groundcrew	0 (0.0)	5 (0.9)	--	0.173 ^a
11-10	Ocular Movement	All	14 (1.6)	17 (1.4)	1.19 (0.58,2.43)	0.632
		Officer	2 (0.6)	5 (1.0)	0.58 (0.11,2.99)	0.513
		Enlisted Flyer	3 (2.0)	2 (1.1)	1.87 (0.31,11.37)	0.494
		Enlisted Groundcrew	9 (2.4)	10 (1.8)	1.37 (0.55,3.42)	0.493
11-11	Facial Sensation	All	2 (0.2)	2 (0.2)	1.44 (0.20,10.27)	0.714
		Officer	1 (0.3)	1 (0.2)	1.46 (0.09,23.35)	0.791
		Enlisted Flyer	0 (0.0)	1 (0.5)	--	0.999 ^a
		Enlisted Groundcrew	1 (0.3)	0 (0.0)	--	0.834 ^a
11-12	Jaw Clench	All	2 (0.2)	0 (0.0)	--	0.327 ^a
		Officer	2 (0.6)	0 (0.0)	--	0.325 ^a
		Enlisted Flyer	0 (0.0)	0 (0.0)	--	--
		Enlisted Groundcrew	0 (0.0)	0 (0.0)	--	--
11-13	Smile	All	7 (0.8)	4 (0.3)	2.54 (0.74,8.69)	0.129
		Officer	1 (0.3)	2 (0.4)	0.72 (0.07,8.02)	0.793
		Enlisted Flyer	1 (0.7)	0 (0.0)	--	0.915 ^a
		Enlisted Groundcrew	5 (1.3)	2 (0.4)	3.83 (0.74,19.85)	0.110
11-14	Palpebral Fissure	All	7 (0.8)	12 (1.0)	0.84 (0.33,2.14)	0.713
		Officer	2 (0.6)	5 (1.0)	0.58 (0.11,2.99)	0.513
		Enlisted Flyer	1 (0.7)	1 (0.5)	1.24 (0.08,19.99)	0.879
		Enlisted Groundcrew	4 (1.1)	6 (1.1)	1.01 (0.28,3.61)	0.986

**Table G-5. Summary of Unadjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Number (%) Abnormal		Est. Relative Risk (95% C.I.)	p-Value
			RH	C		
11-15	Balance	All	7 (0.8)	7 (0.6)	1.44 (0.50,4.13)	0.494
		Officer	5 (1.5)	2 (0.4)	3.66 (0.71,19.00)	0.122
		Enlisted Flyer	0 (0.0)	1 (0.5)	--	0.999 ^a
		Enlisted Groundcrew	2 (0.5)	4 (0.7)	0.76 (0.14,4.16)	0.749
11-16	Speech	All	4 (0.5)	10 (0.8)	0.57 (0.18,1.84)	0.334
		Officer	1 (0.3)	2 (0.4)	0.72 (0.07,8.02)	0.793
		Enlisted Flyer	0 (0.0)	1 (0.5)	--	0.999 ^a
		Enlisted Groundcrew	3 (0.8)	7 (1.2)	0.65 (0.17,2.52)	0.531
11-17	Tongue Position Relative to Midline	All	2 (0.2)	0 (0.0)	--	0.327 ^a
		Officer	2 (0.6)	0 (0.0)	--	0.325 ^a
		Enlisted Flyer	0 (0.0)	0 (0.0)	--	--
		Enlisted Groundcrew	0 (0.0)	0 (0.0)	--	--
11-18	Palate and Uvula Movement	All	1 (0.1)	0 (0.0)	--	0.854 ^a
		Officer	1 (0.3)	0 (0.0)	--	0.852 ^a
		Enlisted Flyer	0 (0.0)	0 (0.0)	--	--
		Enlisted Groundcrew	0 (0.0)	0 (0.0)	--	--
11-19	Cranial Nerve Index	All	56 (6.6)	72 (5.8)	1.15 (0.80,1.65)	0.452
		Officer	17 (5.2)	26 (5.3)	0.98 (0.52,1.83)	0.941
		Enlisted Flyer	13 (8.6)	10 (5.4)	1.66 (0.71,3.89)	0.246
		Enlisted Groundcrew	26 (7.0)	36 (6.4)	1.11 (0.66,1.88)	0.683
11-20	Neck Range of Motion	All	165 (19.1)	188 (15.1)	1.33 (1.06,1.67)	0.016
		Officer	70 (20.6)	81 (16.4)	1.32 (0.92,1.88)	0.126
		Enlisted Flyer	41 (27.2)	29 (15.5)	2.03 (1.19,3.46)	0.009
		Enlisted Groundcrew	54 (14.4)	78 (13.7)	1.06 (0.73,1.54)	0.764
11-21	Pinprick	All	57 (6.9)	67 (5.7)	1.24 (0.86,1.79)	0.244
		Officer	20 (6.2)	22 (4.7)	1.35 (0.72,2.51)	0.350
		Enlisted Flyer	19 (13.1)	14 (7.7)	1.81 (0.87,3.75)	0.110
		Enlisted Groundcrew	18 (5.1)	31 (5.8)	0.87 (0.48,1.57)	0.638
11-22	Light Touch	All	38 (4.6)	45 (3.8)	1.23 (0.79,1.91)	0.363
		Officer	15 (4.7)	13 (2.8)	1.71 (0.80,3.65)	0.163
		Enlisted Flyer	12 (8.3)	10 (5.5)	1.55 (0.65,3.70)	0.322
		Enlisted Groundcrew	11 (3.1)	22 (4.1)	0.74 (0.36,1.55)	0.432
11-23	Muscle Status	All	39 (4.5)	37 (3.0)	1.54 (0.98,2.44)	0.064
		Officer	13 (3.8)	18 (3.7)	1.05 (0.51,2.17)	0.897
		Enlisted Flyer	10 (6.6)	7 (3.7)	1.82 (0.68,4.91)	0.235
		Enlisted Groundcrew	16 (4.3)	12 (2.1)	2.06 (0.97,4.42)	0.062
11-24	Patellar Reflex	All	24 (2.8)	35 (2.8)	0.99 (0.58,1.67)	0.962
		Officer	12 (3.5)	16 (3.3)	1.09 (0.51,2.34)	0.823
		Enlisted Flyer	1 (0.7)	7 (3.8)	0.17 (0.02,1.40)	0.100
		Enlisted Groundcrew	11 (2.9)	12 (2.1)	1.40 (0.61,3.21)	0.425

**Table G-5. Summary of Unadjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Number (%) Abnormal		Est. Relative Risk (95% C.I.)	p-Value
			RH	C		
11-25	Achilles Reflex	All	153 (17.7)	203 (16.3)	1.10 (0.88,1.39)	0.410
		Officer	67 (19.7)	82 (16.7)	1.22 (0.86,1.75)	0.267
		Enlisted Flyer	30 (19.9)	37 (19.9)	1.00 (0.58,1.71)	0.995
		Enlisted Groundcrew	56 (15.0)	84 (14.8)	1.01 (0.70,1.46)	0.947
11-26	Biceps Reflex	All	12 (1.4)	12 (1.0)	1.45 (0.65,3.24)	0.369
		Officer	5 (1.5)	6 (1.2)	1.21 (0.37,4.00)	0.753
		Enlisted Flyer	2 (1.3)	2 (1.1)	1.24 (0.17,8.92)	0.830
		Enlisted Groundcrew	5 (1.3)	4 (0.7)	1.91 (0.51,7.14)	0.339
11-27	Babinski Reflex	All	8 (0.9)	13 (1.0)	0.88 (0.36,2.14)	0.785
		Officer	3 (0.9)	2 (0.4)	2.18 (0.36,13.12)	0.394
		Enlisted Flyer	1 (0.7)	3 (1.6)	0.40 (0.04,3.93)	0.435
		Enlisted Groundcrew	4 (1.1)	8 (1.4)	0.76 (0.23,2.53)	0.650
11-29	Polyneuropathy Prevalence Index	All	130 (15.8)	179 (15.1)	1.06 (0.83,1.35)	0.668
		Officer	55 (17.1)	75 (16.0)	1.08 (0.74,1.58)	0.694
		Enlisted Flyer	29 (20.0)	39 (21.4)	0.92 (0.53,1.57)	0.752
		Enlisted Groundcrew	46 (13.0)	65 (12.2)	1.08 (0.72,1.61)	0.725
11-30	Multiple Polyneuropathy Index	All	41 (5.0)	38 (3.2)	1.58 (1.01,2.49)	0.046
		Officer	16 (5.0)	17 (3.6)	1.39 (0.69,2.79)	0.358
		Enlisted Flyer	13 (9.0)	9 (5.0)	1.89 (0.79,4.56)	0.155
		Enlisted Groundcrew	12 (3.4)	12 (2.3)	1.52 (0.68,3.43)	0.309
11-31	Confirmed Polyneuropathy Indicator	All	11 (1.4)	7 (0.6)	2.30 (0.89,5.95)	0.082
		Officer	2 (0.6)	6 (1.3)	0.49 (0.10,2.43)	0.381
		Enlisted Flyer	4 (2.8)	0 (0.0)	--	0.079 ^a
		Enlisted Groundcrew	5 (1.4)	1 (0.2)	7.62 (0.89,65.47)	0.064
11-32	Tremor	All	60 (6.9)	91 (7.3)	0.95 (0.68,1.33)	0.753
		Officer	22 (6.5)	29 (5.9)	1.11 (0.62,1.96)	0.728
		Enlisted Flyer	15 (9.9)	15 (8.0)	1.26 (0.60,2.68)	0.540
		Enlisted Groundcrew	23 (6.1)	47 (8.3)	0.73 (0.43,1.22)	0.224
11-33	Coordination	All	19 (2.2)	31 (2.5)	0.88 (0.49,1.57)	0.663
		Officer	10 (2.9)	8 (1.6)	1.84 (0.72,4.70)	0.205
		Enlisted Flyer	1 (0.7)	4 (2.2)	0.30 (0.03,2.74)	0.288
		Enlisted Groundcrew	8 (2.1)	19 (3.4)	0.63 (0.27,1.45)	0.279
11-34	Romberg Sign	All	7 (0.8)	7 (0.6)	1.44 (0.50,4.13)	0.494
		Officer	5 (1.5)	2 (0.4)	3.66 (0.71,19.00)	0.122
		Enlisted Flyer	0 (0.0)	1 (0.5)	--	0.999 ^a
		Enlisted Groundcrew	2 (0.5)	4 (0.7)	0.76 (0.14,4.16)	0.749
11-35	Gait	All	50 (5.8)	57 (4.6)	1.28 (0.87,1.89)	0.214
		Officer	19 (5.6)	26 (5.3)	1.06 (0.58,1.95)	0.844
		Enlisted Flyer	11 (7.3)	11 (5.9)	1.26 (0.53,2.98)	0.604
		Enlisted Groundcrew	20 (5.3)	20 (3.5)	1.55 (0.82,2.92)	0.178

**Table G-5. Summary of Unadjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Number (%) Abnormal		Est. Relative Risk (95% C.I.)	p-Value
			RH	C		
11-36	CNS Index	All	107 (12.4)	148 (11.9)	1.05 (0.80,1.37)	0.731
		Officer	39 (11.5)	53 (10.8)	1.08 (0.69,1.67)	0.745
		Enlisted Flyer	24 (15.9)	28 (15.0)	1.07 (0.59,1.94)	0.816
		Enlisted Groundcrew	44 (11.7)	67 (11.8)	0.99 (0.66,1.49)	0.977
12-3	Psychoses	All	34 (3.9)	48 (3.8)	1.02 (0.65,1.60)	0.927
		Officer	9 (2.6)	12 (2.4)	1.09 (0.45,2.61)	0.853
		Enlisted Flyer	10 (6.6)	7 (3.7)	1.82 (0.68,4.91)	0.235
		Enlisted Groundcrew	15 (4.0)	29 (5.1)	0.78 (0.41,1.47)	0.435
12-4	Alcohol Dependence	All	62 (7.2)	83 (6.7)	1.08 (0.77,1.52)	0.655
		Officer	15 (4.4)	26 (5.3)	0.83 (0.43,1.58)	0.566
		Enlisted Flyer	14 (9.3)	16 (8.6)	1.09 (0.52,2.32)	0.818
		Enlisted Groundcrew	33 (8.8)	41 (7.2)	1.24 (0.77,2.00)	0.377
12-5	Drug Dependence	All	2 (0.2)	4 (0.3)	0.72 (0.13,3.94)	0.700
		Officer	0 (0.0)	1 (0.2)	--	0.999 ^a
		Enlisted Flyer	0 (0.0)	0 (0.0)	--	--
		Enlisted Groundcrew	2 (0.5)	3 (0.5)	1.01 (0.17,6.08)	0.990
12-6	Anxiety	All	232 (26.9)	334 (26.8)	1.00 (0.83,1.22)	0.969
		Officer	56 (16.5)	88 (17.9)	0.91 (0.63,1.31)	0.605
		Enlisted Flyer	48 (32.0)	56 (30.0)	1.10 (0.69,1.75)	0.685
		Enlisted Groundcrew	128 (34.3)	190 (33.6)	1.03 (0.78,1.36)	0.813
12-7	Other Neuroses	All	467 (54.6)	660 (53.2)	1.06 (0.89,1.26)	0.529
		Officer	136 (40.2)	226 (46.0)	0.79 (0.60,1.05)	0.099
		Enlisted Flyer	93 (62.4)	112 (60.5)	1.08 (0.69,1.69)	0.726
		Enlisted Groundcrew	238 (64.7)	322 (57.1)	1.38 (1.05,1.08)	0.021
12-8	SCL-90-R Anxiety	All	82 (9.5)	140 (11.2)	0.83 (0.62,1.10)	0.197
		Officer	14 (4.1)	28 (5.7)	0.71 (0.37,1.37)	0.309
		Enlisted Flyer	15 (10.0)	30 (16.0)	0.58 (0.30,1.13)	0.108
		Enlisted Groundcrew	53 (14.1)	82 (14.4)	0.98 (0.67,1.42)	0.905
12-9	SCL-90-R Depression	All	115 (13.3)	201 (16.1)	0.80 (0.62,1.02)	0.073
		Officer	28 (8.2)	47 (9.5)	0.85 (0.52,1.39)	0.512
		Enlisted Flyer	19 (12.7)	40 (21.4)	0.53 (0.29,0.97)	0.038
		Enlisted Groundcrew	68 (18.1)	114 (20.0)	0.88 (0.63,1.23)	0.469
12-10	SCL-90-R Hostility	All	61 (7.0)	111 (8.9)	0.78 (0.56,1.08)	0.124
		Officer	11 (3.2)	23 (4.7)	0.68 (0.33,1.42)	0.304
		Enlisted Flyer	11 (7.3)	21 (11.2)	0.63 (0.29,1.34)	0.228
		Enlisted Groundcrew	39 (10.4)	67 (11.8)	0.87 (0.57,1.32)	0.513
12-11	SCL-90-R Interpersonal Sensitivity	All	117 (13.5)	205 (16.4)	0.80 (0.62,1.02)	0.066
		Officer	25 (7.3)	40 (8.1)	0.90 (0.53,1.51)	0.679
		Enlisted Flyer	22 (14.7)	42 (22.5)	0.59 (0.34,1.05)	0.072
		Enlisted Groundcrew	70 (18.7)	123 (21.6)	0.83 (0.60,1.15)	0.272

**Table G-5. Summary of Unadjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Number (%) Abnormal		Est. Relative Risk (95% C.I.)	p-Value
			RH	C		
12-12	SCL-90-R Obsessive-Compulsive Behavior	All	121 (14.0)	205 (16.4)	0.83 (0.65,1.06)	0.125
		Officer	30 (8.8)	47 (9.5)	0.92 (0.57,1.48)	0.718
		Enlisted Flyer	28 (18.7)	41 (21.9)	0.82 (0.48,1.40)	0.462
		Enlisted Groundcrew	63 (16.8)	117 (20.6)	0.78 (0.56,1.09)	0.150
12-13	SCL-90-R Paranoid Ideation	All	57 (6.6)	89 (7.1)	0.92 (0.65,1.30)	0.627
		Officer	8 (2.4)	15 (3.0)	0.77 (0.32,1.83)	0.547
		Enlisted Flyer	8 (5.3)	17 (9.1)	0.56 (0.24,1.34)	0.196
		Enlisted Groundcrew	41 (10.9)	57 (10.0)	1.10 (0.72,1.69)	0.652
12-14	SCL-90-R Phobic Anxiety	All	85 (9.8)	131 (10.5)	0.93 (0.70,1.24)	0.615
		Officer	10 (2.9)	28 (5.7)	0.50 (0.24,1.05)	0.066
		Enlisted Flyer	15 (10.0)	27 (14.4)	0.66 (0.34,1.29)	0.223
		Enlisted Groundcrew	60 (16.0)	76 (13.4)	1.24 (0.86,1.78)	0.258
12-15	SCL-90-R Psychoticism	All	105 (12.1)	184 (14.7)	0.80 (0.62,1.03)	0.084
		Officer	21 (6.2)	45 (9.1)	0.65 (0.38,1.12)	0.121
		Enlisted Flyer	19 (12.7)	31 (16.6)	0.73 (0.39,1.35)	0.317
		Enlisted Groundcrew	65 (17.3)	108 (19.0)	0.90 (0.64,1.26)	0.522
12-16	SCL-90-R Somatization	All	143 (16.5)	201 (16.1)	1.03 (0.82,1.30)	0.797
		Officer	25 (7.3)	36 (7.3)	1.00 (0.59,1.71)	0.987
		Enlisted Flyer	33 (22.0)	52 (27.8)	0.73 (0.44,1.21)	0.223
		Enlisted Groundcrew	85 (22.7)	113 (19.9)	1.18 (0.86,1.62)	0.300
12-17	SCL-90-R Global Severity Index (GSI)	All	118 (13.6)	195 (15.6)	0.85 (0.67,1.09)	0.204
		Officer	23 (6.7)	37 (7.5)	0.89 (0.52,1.53)	0.676
		Enlisted Flyer	22 (14.7)	41 (21.9)	0.61 (0.35,1.08)	0.091
		Enlisted Groundcrew	73 (19.5)	117 (20.6)	0.93 (0.67,1.29)	0.681
12-18	SCL-90-R Positive Symptom Total (PST)	All	123 (14.2)	213 (17.1)	0.81 (0.63,1.02)	0.076
		Officer	25 (7.3)	46 (9.3)	0.77 (0.46,1.28)	0.310
		Enlisted Flyer	26 (17.3)	42 (22.5)	0.72 (0.42,1.25)	0.245
		Enlisted Groundcrew	72 (19.2)	125 (22.0)	0.84 (0.61,1.17)	0.306
12-19	SCL-90-R Positive Symptom Distress Index (PSDI)	All	69 (8.0)	84 (6.7)	1.20 (0.86,1.67)	0.280
		Officer	14 (4.1)	17 (3.5)	1.20 (0.58,2.47)	0.622
		Enlisted Flyer	13 (8.7)	19 (10.2)	0.84 (0.40,1.76)	0.642
		Enlisted Groundcrew	42 (11.2)	48 (8.4)	1.37 (0.88,2.12)	0.158
13-3	Uncharacterized Hepatitis	All	17 (2.0)	21 (1.7)	1.17 (0.61,2.23)	0.634
		Officer	5 (1.5)	7 (1.4)	1.03 (0.32,3.28)	0.958
		Enlisted Flyer	4 (2.6)	3 (1.6)	1.67 (0.37,7.57)	0.507
		Enlisted Groundcrew	8 (2.1)	11 (1.9)	1.11 (0.44,2.78)	0.826
13-4	Jaundice	All	12 (1.4)	35 (2.9)	0.49 (0.25,0.94)	0.025
		Officer	6 (1.8)	19 (4.0)	0.45 (0.18,1.14)	0.091
		Enlisted Flyer	3 (2.0)	1 (0.6)	3.70 (0.38,35.9)	0.260
		Enlisted Groundcrew	3 (0.8)	15 (2.7)	0.30 (0.09,1.04)	0.057

**Table G-5. Summary of Unadjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Number (%) Abnormal		Est. Relative Risk (95% C.I.)	p-Value
			RH	C		
13-5	Chronic Liver Disease and Cirrhosis (Alcohol-related)	All	39 (4.8)	56 (4.7)	1.01 (0.67,1.54)	0.958
		Officer	15 (4.6)	14 (3.0)	1.58 (0.75,3.32)	0.229
		Enlisted Flyer	7 (5.1)	12 (6.7)	0.75 (0.29,1.95)	0.553
		Enlisted Groundcrew	17 (4.8)	30 (5.6)	0.85 (0.46,1.57)	0.602
13-6	Chronic Liver Disease and Cirrhosis (Non-alcohol-related)	All	14 (1.6)	14 (1.1)	1.44 (0.68,3.04)	0.336
		Officer	5 (1.5)	3 (0.6)	2.43 (0.58,10.18)	0.226
		Enlisted Flyer	2 (1.3)	3 (1.6)	0.82 (0.14,4.99)	0.832
		Enlisted Groundcrew	7 (1.9)	8 (1.4)	1.33 (0.48,3.69)	0.589
13-7	Liver Abscess and Sequelae of Chronic Liver Disease	All	1 (0.1)	1 (0.1)	1.44 (0.09,23.03)	0.798
		Officer	0 (0.0)	1 (0.2)	--	0.999 ^a
		Enlisted Flyer	0 (0.0)	0 (0.0)	--	--
		Enlisted Groundcrew	1 (0.3)	0 (0.0)	--	0.836 ^a
13-8	Enlarged Liver (Hepatomegaly)	All	14 (1.6)	27 (2.2)	0.74 (0.39,1.42)	0.361
		Officer	5 (1.5)	9 (1.8)	0.80 (0.27,2.40)	0.689
		Enlisted Flyer	6 (4.0)	3 (1.6)	2.54 (0.62,10.32)	0.193
		Enlisted Groundcrew	3 (0.8)	15 (2.6)	0.30 (0.09,1.03)	0.056
13-9	Other Liver Disorders	All	249 (28.8)	312 (25.2)	1.20 (0.99,1.46)	0.067
		Officer	93 (27.5)	121 (24.9)	1.15 (0.84,1.57)	0.399
		Enlisted Flyer	40 (26.5)	48 (25.7)	1.04 (0.64,1.70)	0.864
		Enlisted Groundcrew	116 (30.8)	143 (25.2)	1.32 (0.99,1.76)	0.062
13-10	Current Hepatomegaly	All	10 (1.2)	7 (0.6)	2.06 (0.78,5.43)	0.141
		Officer	4 (1.2)	2 (0.4)	2.90 (0.53,15.95)	0.220
		Enlisted Flyer	2 (1.3)	0 (0.0)	--	0.389 ^a
		Enlisted Groundcrew	4 (1.1)	5 (0.9)	1.20 (0.32,4.51)	0.783
13-12	AST	All	63 (7.3)	82 (6.7)	1.11 (0.79,1.56)	0.552
		Officer	24 (7.1)	32 (6.5)	1.09 (0.63,1.88)	0.765
		Enlisted Flyer	10 (6.7)	16 (8.6)	0.75 (0.33,1.72)	0.501
		Enlisted Groundcrew	29 (7.9)	34 (6.1)	1.31 (0.78,2.19)	0.304
13-14	ALT	All	68 (7.9)	87 (7.1)	1.13 (0.81,1.57)	0.468
		Officer	23 (6.8)	22 (4.5)	1.54 (0.85,2.82)	0.157
		Enlisted Flyer	15 (10.0)	19 (10.3)	0.97 (0.48,1.98)	0.935
		Enlisted Groundcrew	30 (8.1)	46 (8.3)	0.98 (0.61,1.59)	0.938
13-16	GGT	All	89 (10.4)	124 (10.1)	1.03 (0.77,1.38)	0.831
		Officer	31 (9.1)	37 (7.6)	1.23 (0.75,2.02)	0.419
		Enlisted Flyer	23 (15.3)	25 (13.5)	1.16 (0.63,2.14)	0.637
		Enlisted Groundcrew	35 (9.5)	62 (11.2)	0.83 (0.54,1.29)	0.419
13-18	Alkaline Phosphatase	All	22 (2.6)	24 (1.9)	1.32 (0.74,2.37)	0.352
		Officer	4 (1.2)	12 (2.4)	0.47 (0.15,1.48)	0.200
		Enlisted Flyer	6 (4.0)	4 (2.2)	1.89 (0.52,6.81)	0.333
		Enlisted Groundcrew	12 (3.3)	8 (1.4)	2.30 (0.93,5.69)	0.071

**Table G-5. Summary of Unadjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Number (%) Abnormal		Est. Relative Risk (95% C.I.)	p-Value
			RH	C		
13-20	Total Bilirubin	All	46 (5.4)	76 (6.2)	0.86 (0.59,1.25)	0.430
		Officer	22 (6.5)	35 (7.1)	0.90 (0.52,1.56)	0.707
		Enlisted Flyer	8 (5.3)	9 (4.9)	1.10 (0.41,2.93)	0.846
		Enlisted Groundcrew	16 (4.3)	32 (5.8)	0.74 (0.40,1.37)	0.342
13-21	Direct Bilirubin	All	1 (0.1)	5 (0.4)	0.29 (0.03,2.45)	0.196
		Officer	1 (0.3)	3 (0.6)	0.48 (0.05,4.62)	0.524
		Enlisted Flyer	0 (0.0)	0 (0.0)	--	--
		Enlisted Groundcrew	0 (0.0)	2 (0.4)	--	0.667 ^a
13-23	Lactic Dehydrogenase	All	81 (9.4)	129 (10.5)	0.89 (0.66,1.19)	0.424
		Officer	32 (9.4)	53 (10.8)	0.85 (0.54,1.36)	0.506
		Enlisted Flyer	13 (8.7)	15 (8.2)	1.07 (0.49,2.32)	0.866
		Enlisted Groundcrew	36 (9.8)	61 (11.0)	0.88 (0.57,1.35)	0.555
13-25	Cholesterol	All	130 (15.1)	182 (14.8)	1.03 (0.81,1.31)	0.826
		Officer	39 (11.5)	68 (13.9)	0.80 (0.53,1.22)	0.310
		Enlisted Flyer	22 (14.7)	28 (15.1)	0.96 (0.53,1.77)	0.905
		Enlisted Groundcrew	69 (18.7)	86 (15.5)	1.26 (0.89,1.78)	0.198
13-27	HDL Cholesterol	All	71 (8.3)	90 (7.3)	1.14 (0.83,1.58)	0.421
		Officer	19 (5.6)	24 (4.9)	1.15 (0.62,2.13)	0.664
		Enlisted Flyer	16 (10.7)	18 (9.7)	1.12 (0.55,2.27)	0.762
		Enlisted Groundcrew	36 (9.8)	48 (8.7)	1.14 (0.73,1.80)	0.561
13-29	Cholesterol-HDL Ratio	All	356 (41.5)	505 (41.1)	1.02 (0.85,1.22)	0.843
		Officer	114 (33.5)	156 (31.9)	1.08 (0.80,1.45)	0.623
		Enlisted Flyer	58 (38.9)	87 (47.0)	0.72 (0.46,1.11)	0.138
		Enlisted Groundcrew	184 (49.9)	262 (47.1)	1.12 (0.86,1.45)	0.414
13-31	Triglycerides	All	188 (21.9)	250 (20.3)	1.10 (0.89,1.36)	0.377
		Officer	60 (17.7)	82 (16.7)	1.07 (0.74,1.54)	0.717
		Enlisted Flyer	30 (20.0)	51 (27.6)	0.66 (0.39,1.10)	0.109
		Enlisted Groundcrew	98 (26.6)	117 (21.0)	1.36 (1.00,1.85)	0.052
13-33	Creatine Phosphokinase	All	72 (8.4)	115 (9.3)	0.89 (0.65,1.21)	0.448
		Officer	26 (7.6)	44 (9.0)	0.84 (0.51,1.39)	0.497
		Enlisted Flyer	7 (4.7)	15 (8.1)	0.55 (0.22,1.40)	0.212
		Enlisted Groundcrew	39 (10.6)	56 (10.1)	1.06 (0.69,1.62)	0.807
13-35	Serum Amylase	All	25 (2.9)	38 (3.1)	0.94 (0.56,1.57)	0.816
		Officer	7 (2.1)	22 (4.5)	0.45 (0.19,1.06)	0.067
		Enlisted Flyer	4 (2.7)	3 (1.6)	1.66 (0.37,7.54)	0.510
		Enlisted Groundcrew	14 (3.8)	13 (2.3)	1.65 (0.77,3.55)	0.202
13-36	Antibodies for Hepatitis A	All	283 (32.5)	421 (33.7)	0.95 (0.79,1.14)	0.580
		Officer	92 (27.0)	133 (27.0)	1.00 (0.73,1.36)	0.999
		Enlisted Flyer	74 (49.0)	86 (46.0)	1.13 (0.73,1.73)	0.581
		Enlisted Groundcrew	117 (31.0)	202 (35.4)	0.82 (0.62,1.08)	0.153

**Table G-5. Summary of Unadjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Number (%) Abnormal		Est. Relative Risk (95% C.I.)	p-Value
			RH	C		
13-37	Prior Hepatitis B	All	77 (8.9)	170 (13.6)	0.62 (0.46,0.82)	0.001
		Officer	13 (3.8)	37 (7.5)	0.49 (0.26,0.94)	0.031
		Enlisted Flyer	19 (12.6)	37 (19.8)	0.58 (0.32,1.06)	0.079
		Enlisted Groundcrew	45 (11.9)	96 (16.9)	0.66 (0.45,0.97)	0.035
13-38	Current Hepatitis B	All	1 (0.1)	2 (0.2)	0.72 (0.07,7.94)	0.784
		Officer	0 (0.0)	0 (0.0)	--	--
		Enlisted Flyer	0 (0.0)	0 (0.0)	--	--
		Enlisted Groundcrew	1 (0.3)	2 (0.4)	0.75 (0.07,8.34)	0.817
13-39	Antibodies for Hepatitis C	All	9 (1.0)	18 (1.4)	0.72 (0.32,1.60)	0.408
		Officer	1 (0.3)	4 (0.8)	0.36 (0.04,3.24)	0.362
		Enlisted Flyer	1 (0.7)	2 (1.1)	0.62 (0.06,6.87)	0.694
		Enlisted Groundcrew	7 (1.9)	12 (2.1)	0.88 (0.34,2.25)	0.785
13-40	Stool Hemoccult	All	29 (3.5)	53 (4.4)	0.78 (0.49,1.23)	0.279
		Officer	14 (4.2)	22 (4.6)	0.92 (0.46,1.83)	0.818
		Enlisted Flyer	2 (1.4)	7 (3.9)	0.34 (0.07,1.65)	0.179
		Enlisted Groundcrew	13 (3.7)	24 (4.5)	0.81 (0.41,1.61)	0.547
13-42	Prealbumin	All	13 (1.5)	11 (0.9)	1.70 (0.76,3.82)	0.195
		Officer	5 (1.5)	7 (1.4)	1.03 (0.32,3.27)	0.960
		Enlisted Flyer	1 (0.7)	1 (0.5)	1.23 (0.08,19.91)	0.882
		Enlisted Groundcrew	7 (1.9)	3 (0.5)	3.56 (0.92,13.87)	0.067
13-44	Albumin	All	3 (0.3)	10 (0.8)	0.43 (0.12,1.56)	0.170
		Officer	3 (0.9)	4 (0.8)	1.08 (0.24,4.86)	0.919
		Enlisted Flyer	0 (0.0)	1 (0.5)	--	0.999 ^a
		Enlisted Groundcrew	0 (0.0)	5 (0.9)	--	0.171 ^a
13-46	α -1-Acid Glycoprotein	All	37 (4.3)	40 (3.2)	1.34 (0.85,2.11)	0.209
		Officer	8 (2.4)	15 (3.1)	0.76 (0.32,1.82)	0.542
		Enlisted Flyer	9 (6.0)	7 (3.8)	1.62 (0.59,4.47)	0.348
		Enlisted Groundcrew	20 (5.4)	18 (3.2)	1.71 (0.89,3.28)	0.105
13-50	α -2-Macroglobulin	All	24 (2.8)	47 (3.8)	0.72 (0.44,1.19)	0.199
		Officer	8 (2.4)	18 (3.7)	0.63 (0.27,1.47)	0.287
		Enlisted Flyer	5 (3.3)	11 (5.9)	0.55 (0.19,1.61)	0.271
		Enlisted Groundcrew	11 (3.0)	18 (3.2)	0.92 (0.43,1.97)	0.827
13-52	Apolipoprotein B	All	423 (49.2)	653 (53.0)	0.86 (0.72,1.02)	0.087
		Officer	149 (43.8)	242 (49.4)	0.80 (0.61,1.06)	0.114
		Enlisted Flyer	72 (48.0)	116 (62.7)	0.55 (0.35,0.85)	0.007
		Enlisted Groundcrew	202 (54.7)	295 (53.1)	1.07 (0.82,1.39)	0.615
13-54	C3 Complement	All	15 (1.7)	28 (2.3)	0.76 (0.41,1.44)	0.398
		Officer	6 (1.8)	14 (2.9)	0.61 (0.23,1.61)	0.317
		Enlisted Flyer	1 (0.7)	5 (2.7)	0.24 (0.03,2.09)	0.197
		Enlisted Groundcrew	8 (2.2)	9 (1.6)	1.35 (0.51,3.52)	0.544

**Table G-5. Summary of Unadjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Number (%) Abnormal		Est. Relative Risk (95% C.I.)	p-Value
			RH	C		
13-56	C4 Complement	All	2 (0.2)	2 (0.2)	1.43 (0.20,10.20)	0.719
		Officer	2 (0.6)	1 (0.2)	2.89 (0.26,32.04)	0.386
		Enlisted Flyer	0 (0.0)	1 (0.5)	--	0.999 ^a
		Enlisted Groundcrew	0 (0.0)	0 (0.0)	--	--
13-58	Haptoglobin	All	281 (32.7)	343 (27.9)	1.26 (1.04,1.52)	0.017
		Officer	84 (24.7)	106 (21.6)	1.19 (0.86,1.65)	0.300
		Enlisted Flyer	59 (39.3)	62 (33.5)	1.29 (0.82,2.01)	0.271
		Enlisted Groundcrew	138 (37.4)	175 (31.5)	1.30 (0.99,1.72)	0.063
13-60	Transferrin	All	70 (8.1)	134 (10.9)	0.73 (0.54,0.98)	0.036
		Officer	24 (7.1)	52 (10.6)	0.64 (0.39,1.06)	0.083
		Enlisted Flyer	15 (10.0)	21 (11.4)	0.87 (0.43,1.75)	0.691
		Enlisted Groundcrew	31 (8.4)	61 (11.0)	0.74 (0.47,1.17)	0.202
14-3	Essential Hypertension	All	345 (40.6)	509 (41.7)	0.95 (0.80,1.14)	0.606
		Officer	128 (38.9)	199 (41.5)	0.90 (0.68,1.20)	0.467
		Enlisted Flyer	71 (47.7)	80 (43.5)	1.18 (0.77,1.83)	0.447
		Enlisted Groundcrew	146 (39.2)	230 (41.4)	0.92 (0.70,1.20)	0.519
14-4	Heart Disease (Excluding Essential Hypertension)	All	568 (66.1)	749 (60.8)	1.26 (1.05,1.51)	0.013
		Officer	238 (71.3)	324 (66.9)	1.22 (0.90,1.66)	0.191
		Enlisted Flyer	112 (75.2)	111 (59.7)	2.05 (1.27,3.28)	0.003
		Enlisted Groundcrew	218 (58.0)	314 (55.9)	1.09 (0.84,1.42)	0.523
14-5	Myocardial Infarction	All	74 (8.6)	102 (8.3)	1.04 (0.76,1.43)	0.786
		Officer	28 (8.4)	42 (8.7)	0.96 (0.58,1.59)	0.882
		Enlisted Flyer	16 (10.7)	15 (8.1)	1.37 (0.65,2.87)	0.403
		Enlisted Groundcrew	30 (8.0)	45 (8.0)	1.00 (0.62,1.61)	0.987
14-6	Stroke or Transient Ischemia Attack	All	11 (1.3)	14 (1.1)	1.13 (0.51,2.50)	0.766
		Officer	5 (1.5)	5 (1.0)	1.46 (0.42,5.07)	0.555
		Enlisted Flyer	0 (0.0)	3 (1.6)	--	0.330 ^a
		Enlisted Groundcrew	6 (1.6)	6 (1.1)	1.50 (0.48,4.69)	0.483
14-8	Systolic Blood Pressure	All	181 (21.1)	262 (21.3)	0.99 (0.80,1.22)	0.914
		Officer	78 (23.4)	112 (23.1)	1.01 (0.73,1.41)	0.944
		Enlisted Flyer	36 (24.2)	43 (23.1)	1.06 (0.64,1.76)	0.823
		Enlisted Groundcrew	67 (17.8)	107 (19.0)	0.92 (0.66,1.29)	0.638
14-10	Diastolic Blood Pressure	All	45 (5.2)	61 (5.0)	1.06 (0.71,1.58)	0.769
		Officer	20 (6.0)	22 (4.5)	1.34 (0.72,2.49)	0.360
		Enlisted Flyer	8 (5.4)	8 (4.3)	1.26 (0.46,3.45)	0.649
		Enlisted Groundcrew	17 (4.5)	31 (5.5)	0.81 (0.44,1.49)	0.499
14-11	Heart Sounds	All	31 (3.6)	62 (5.0)	0.71 (0.45,1.10)	0.116
		Officer	11 (3.3)	26 (5.4)	0.60 (0.29,1.23)	0.164
		Enlisted Flyer	7 (4.7)	11 (5.9)	0.78 (0.30,2.08)	0.625
		Enlisted Groundcrew	13 (3.5)	25 (4.4)	0.77 (0.39,1.52)	0.452

**Table G-5. Summary of Unadjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Number (%) Abnormal		Est. Relative Risk (95% C.I.)	p-Value
			RH	C		
14-12	Overall Electrocardiograph	All	268 (31.2)	384 (31.2)	1.00 (0.83,1.21)	0.988
		Officer	120 (35.9)	163 (33.7)	1.10 (0.82,1.48)	0.506
		Enlisted Flyer	60 (40.3)	62 (33.3)	1.35 (0.86,2.11)	0.190
		Enlisted Groundcrew	88 (23.4)	159 (28.3)	0.77 (0.57,1.05)	0.096
14-13	Right Bundle Branch Block	All	21 (2.4)	33 (2.7)	0.91 (0.52,1.58)	0.739
		Officer	8 (2.4)	13 (2.7)	0.89 (0.36,2.17)	0.796
		Enlisted Flyer	8 (5.4)	7 (3.8)	1.45 (0.51,4.10)	0.482
		Enlisted Groundcrew	5 (1.3)	13 (2.3)	0.57 (0.20,1.61)	0.288
14-14	Left Bundle Branch Block	All	5 (0.6)	12 (1.0)	0.60 (0.21,1.70)	0.317
		Officer	2 (0.6)	6 (1.2)	0.48 (0.10,2.39)	0.370
		Enlisted Flyer	1 (0.7)	0 (0.0)	--	0.911 ^a
		Enlisted Groundcrew	2 (0.5)	6 (1.1)	0.50 (0.10,2.47)	0.391
14-15	Non-Specific ST- and T-Wave Changes	All	160 (18.6)	222 (18.0)	1.04 (0.83,1.30)	0.724
		Officer	70 (21.0)	95 (19.6)	1.09 (0.77,1.53)	0.641
		Enlisted Flyer	33 (22.1)	34 (18.3)	1.27 (0.74,2.17)	0.380
		Enlisted Groundcrew	57 (15.2)	93 (16.5)	0.90 (0.63,1.29)	0.570
14-16	Bradycardia	All	24 (2.8)	49 (4.0)	0.69 (0.42,1.14)	0.142
		Officer	15 (4.5)	31 (6.4)	0.69 (0.36,1.29)	0.245
		Enlisted Flyer	5 (3.4)	5 (2.7)	1.26 (0.36,4.43)	0.722
		Enlisted Groundcrew	4 (1.1)	13 (2.3)	0.45 (0.15,1.40)	0.170
14-17	Tachycardia	All	6 (0.7)	4 (0.3)	2.16 (0.61,7.68)	0.228
		Officer	1 (0.3)	1 (0.2)	1.45 (0.09,23.27)	0.793
		Enlisted Flyer	3 (2.0)	0 (0.0)	--	0.174 ^a
		Enlisted Groundcrew	2 (0.5)	3 (0.5)	1.00 (0.17,5.99)	0.997
14-18	Arrhythmia	All	51 (5.9)	68 (5.5)	1.08 (0.74,1.57)	0.686
		Officer	25 (7.5)	25 (5.2)	1.49 (0.84,2.63)	0.176
		Enlisted Flyer	13 (8.7)	12 (6.5)	1.39 (0.61,3.13)	0.433
		Enlisted Groundcrew	13 (3.5)	31 (5.5)	0.61 (0.32,1.19)	0.147
14-19	Evidence of Prior Myocardial Infarction	All	34 (4.0)	53 (4.3)	0.92 (0.59,1.42)	0.698
		Officer	15 (4.5)	23 (4.8)	0.94 (0.48,1.83)	0.862
		Enlisted Flyer	7 (4.7)	9 (4.8)	0.97 (0.35,2.67)	0.952
		Enlisted Groundcrew	12 (3.2)	21 (3.7)	0.85 (0.41,1.75)	0.657
14-20	ECG: Other Diagnoses	All	3 (0.3)	1 (0.1)	4.31 (0.45,41.55)	0.168
		Officer	1 (0.3)	0 (0.0)	--	0.852 ^a
		Enlisted Flyer	0 (0.0)	0 (0.0)	--	--
		Enlisted Groundcrew	2 (0.5)	1 (0.2)	3.00 (0.27,33.20)	0.370
14-21	Funduscopic Examination	All	105 (12.2)	156 (12.7)	0.96 (0.74,1.25)	0.767
		Officer	42 (12.6)	49 (10.1)	1.28 (0.83,1.99)	0.267
		Enlisted Flyer	30 (20.1)	32 (17.3)	1.21 (0.69,2.09)	0.508
		Enlisted Groundcrew	33 (8.8)	75 (13.3)	0.62 (0.41,0.96)	0.033

**Table G-5. Summary of Unadjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Number (%) Abnormal		Est. Relative Risk (95% C.I.)	p-Value
			RH	C		
14-22	Carotid Bruits	All	23 (2.7)	33 (2.7)	1.00 (0.58,1.71)	0.999
		Officer	6 (1.8)	12 (2.5)	0.72 (0.27,1.94)	0.515
		Enlisted Flyer	8 (5.4)	5 (2.7)	2.05 (0.66,6.41)	0.215
		Enlisted Groundcrew	9 (2.4)	16 (2.8)	0.84 (0.37,1.91)	0.673
14-23	Radial Pulses	All	7 (0.8)	4 (0.3)	2.52 (0.74,8.64)	0.131
		Officer	2 (0.6)	2 (0.4)	1.45 (0.20,10.36)	0.710
		Enlisted Flyer	0 (0.0)	0 (0.0)	--	--
		Enlisted Groundcrew	5 (1.3)	2 (0.4)	3.77 (0.73,19.55)	0.114
14-24	Femoral Pulses	All	19 (2.2)	15 (1.2)	1.83 (0.93,3.63)	0.080
		Officer	7 (2.1)	8 (1.7)	1.27 (0.46,3.55)	0.643
		Enlisted Flyer	5 (3.4)	3 (1.6)	2.11 (0.50,8.96)	0.313
		Enlisted Groundcrew	7 (1.9)	4 (0.7)	2.65 (0.77,9.10)	0.123
14-25	Popliteal Pulses	All	23 (2.7)	28 (2.3)	1.18 (0.68,2.06)	0.561
		Officer	7 (2.1)	12 (2.5)	0.84 (0.33,2.16)	0.717
		Enlisted Flyer	5 (3.4)	4 (2.2)	1.57 (0.41,5.96)	0.506
		Enlisted Groundcrew	11 (2.9)	12 (2.1)	1.38 (0.60,3.16)	0.445
14-26	Dorsalis Pedis Pulses	All	69 (8.0)	95 (7.7)	1.04 (0.76,1.44)	0.796
		Officer	27 (8.1)	32 (6.6)	1.24 (0.73,2.11)	0.429
		Enlisted Flyer	18 (12.1)	17 (9.2)	1.36 (0.67,2.74)	0.392
		Enlisted Groundcrew	24 (6.4)	46 (8.2)	0.76 (0.46,1.28)	0.305
14-27	Posterior Tibial Pulses	All	58 (6.8)	64 (5.2)	1.32 (0.91,1.90)	0.142
		Officer	22 (6.6)	23 (4.8)	1.41 (0.77,2.57)	0.263
		Enlisted Flyer	14 (9.4)	13 (7.1)	1.36 (0.62,2.98)	0.449
		Enlisted Groundcrew	22 (5.9)	28 (5.0)	1.19 (0.67,2.10)	0.562
14-28	Leg Pulses	All	94 (10.9)	123 (10.0)	1.10 (0.83,1.47)	0.496
		Officer	36 (10.8)	40 (8.3)	1.34 (0.83,2.15)	0.228
		Enlisted Flyer	25 (16.8)	22 (12.0)	1.48 (0.79,2.74)	0.218
		Enlisted Groundcrew	33 (8.8)	61 (10.9)	0.79 (0.51,1.23)	0.300
14-29	Peripheral Pulses	All	97 (11.3)	126 (10.3)	1.11 (0.84,1.47)	0.454
		Officer	37 (11.1)	42 (8.7)	1.31 (0.82,2.08)	0.258
		Enlisted Flyer	25 (16.8)	22 (12.0)	1.48 (0.79,2.74)	0.218
		Enlisted Groundcrew	35 (9.3)	62 (11.0)	0.83 (0.53,1.28)	0.396
14-30	ICVI Index	All	33 (3.8)	45 (3.7)	1.06 (0.67,1.67)	0.819
		Officer	13 (3.9)	15 (3.1)	1.27 (0.59,2.70)	0.541
		Enlisted Flyer	7 (4.7)	12 (6.5)	0.71 (0.27,1.86)	0.492
		Enlisted Groundcrew	13 (3.5)	18 (3.2)	1.09 (0.53,2.24)	0.825
15-14	Prothrombin Time	All	10 (1.5)	13 (1.3)	1.14 (0.50,2.61)	0.761
		Officer	6 (2.3)	7 (1.7)	1.31 (0.43,3.93)	0.634
		Enlisted Flyer	0 (0.0)	1 (0.6)	--	0.999 ^a
		Enlisted Groundcrew	4 (1.3)	5 (1.1)	1.19 (0.32,4.45)	0.801

**Table G-5. Summary of Unadjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Number (%) Abnormal		Est. Relative Risk (95% C.I.)	p-Value
			RH	C		
15-15	RBC Morphology	All	64 (7.4)	79 (6.3)	1.18 (0.84,1.66)	0.339
		Officer	20 (5.9)	28 (5.7)	1.03 (0.57,1.87)	0.910
		Enlisted Flyer	15 (9.9)	17 (9.1)	1.10 (0.53,2.29)	0.793
		Enlisted Groundcrew	29 (7.8)	34 (6.0)	1.32 (0.79,2.21)	0.286
15-18	Absolute Neutrophils (bands) (Zero vs. Nonzero)	All	146 (16.9)	212 (17.0)	0.99 (0.79,1.25)	0.945
		Officer	47 (13.8)	87 (17.7)	0.75 (0.51,1.10)	0.136
		Enlisted Flyer	36 (23.8)	27 (14.4)	1.86 (1.07,3.23)	0.029
		Enlisted Groundcrew	63 (16.8)	98 (17.2)	0.97 (0.69,1.38)	0.880
15-22	Absolute Eosinophils (Zero vs. Nonzero)	All	106 (12.2)	153 (12.3)	1.00 (0.77,1.30)	0.995
		Officer	36 (10.6)	45 (9.1)	1.18 (0.74,1.86)	0.493
		Enlisted Flyer	17 (11.3)	22 (11.8)	0.95 (0.49,1.86)	0.885
		Enlisted Groundcrew	53 (14.2)	86 (15.1)	0.93 (0.64,1.34)	0.689
15-24	Absolute Basophils (Zero vs. Nonzero)	All	493 (56.9)	669 (53.6)	1.15 (0.96,1.36)	0.126
		Officer	192 (56.3)	261 (52.9)	1.15 (0.87,1.51)	0.338
		Enlisted Flyer	76 (50.3)	100 (53.5)	0.88 (0.57,1.35)	0.565
		Enlisted Groundcrew	225 (60.2)	308 (54.1)	1.28 (0.98,1.67)	0.068
16-3	Past Thyroid Disease	All	65 (7.5)	105 (8.4)	0.89 (0.64,1.22)	0.456
		Officer	29 (8.6)	46 (9.3)	0.91 (0.56,1.48)	0.704
		Enlisted Flyer	15 (10.0)	14 (7.5)	1.37 (0.64,2.94)	0.415
		Enlisted Groundcrew	21 (5.6)	45 (7.9)	0.69 (0.40,1.18)	0.171
16-4	Composite Diabetes Indicator	All	145 (16.9)	209 (17.0)	0.99 (0.79,1.25)	0.960
		Officer	52 (15.4)	71 (14.5)	1.08 (0.73,1.59)	0.709
		Enlisted Flyer	27 (18.2)	38 (20.7)	0.86 (0.50,1.48)	0.583
		Enlisted Groundcrew	66 (17.6)	100 (17.9)	0.98 (0.70,1.38)	0.915
16-7	Thyroid Gland	All	6 (0.7)	16 (1.3)	0.53 (0.21,1.36)	0.171
		Officer	4 (1.2)	11 (2.3)	0.52 (0.16,1.63)	0.260
		Enlisted Flyer	1 (0.7)	1 (0.5)	1.27 (0.08,20.41)	0.868
		Enlisted Groundcrew	1 (0.3)	4 (0.7)	0.37 (0.04,3.32)	0.374
16-8	Testicular Examination	All	39 (4.5)	47 (3.8)	1.20 (0.78,1.85)	0.409
		Officer	16 (4.8)	27 (5.5)	0.86 (0.45,1.62)	0.635
		Enlisted Flyer	9 (6.1)	8 (4.3)	1.42 (0.54,3.79)	0.478
		Enlisted Groundcrew	14 (3.7)	12 (2.1)	1.77 (0.81,3.87)	0.152
16-12	Thyroxine	All	23 (2.7)	32 (2.7)	1.03 (0.60,1.77)	0.928
		Officer	13 (4.0)	16 (3.4)	1.17 (0.56,2.47)	0.674
		Enlisted Flyer	3 (2.1)	3 (1.6)	1.27 (0.25,6.39)	0.772
		Enlisted Groundcrew	7 (1.9)	13 (2.4)	0.79 (0.31,2.01)	0.624
16-13	Anti-Thyroid Antibodies	All	5 (0.6)	7 (0.6)	1.02 (0.32,3.22)	0.975
		Officer	2 (0.6)	4 (0.9)	0.72 (0.13,3.93)	0.701
		Enlisted Flyer	2 (1.4)	1 (0.5)	2.55 (0.23,28.40)	0.447
		Enlisted Groundcrew	1 (0.3)	2 (0.4)	0.74 (0.07,8.18)	0.805

**Table G-5. Summary of Unadjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Number (%) Abnormal		Est. Relative Risk (95% C.I.)	p-Value
			RH	C		
16-15	Fasting Glucose	All	152 (17.5)	212 (17.0)	1.04 (0.83,1.31)	0.741
		Officer	56 (16.5)	75 (15.2)	1.11 (0.76,1.61)	0.603
		Enlisted Flyer	29 (19.2)	36 (19.3)	1.00 (0.58,1.72)	0.991
		Enlisted Groundcrew	67 (17.7)	101 (17.8)	1.00 (0.71,1.40)	0.992
16-17	2-Hour Postprandial Glucose	All	113 (15.8)	161 (15.7)	1.01 (0.77,1.31)	0.960
		Officer	52 (18.2)	54 (12.9)	1.51 (1.00,2.28)	0.052
		Enlisted Flyer	22 (18.2)	31 (21.2)	0.82 (0.45,1.52)	0.534
		Enlisted Groundcrew	39 (12.7)	76 (16.6)	0.73 (0.48,1.11)	0.136
16-18	Fasting Urinary Glucose	All	35 (4.0)	54 (4.3)	0.93 (0.60,1.44)	0.745
		Officer	11 (3.2)	12 (2.4)	1.35 (0.59,3.09)	0.482
		Enlisted Flyer	8 (5.3)	9 (4.8)	1.11 (0.42,2.94)	0.839
		Enlisted Groundcrew	16 (4.2)	33 (5.8)	0.72 (0.39,1.32)	0.288
16-19	2-Hour Postprandial Urinary Glucose	All	179 (25.1)	224 (21.9)	1.19 (0.95,1.50)	0.122
		Officer	68 (24.0)	73 (17.5)	1.49 (1.03,2.17)	0.034
		Enlisted Flyer	28 (23.1)	43 (29.7)	0.71 (0.41,1.24)	0.233
		Enlisted Groundcrew	83 (26.9)	108 (23.6)	1.20 (0.86,1.67)	0.291
16-23	α -1-C Hemoglobin	All	97 (11.2)	130 (10.4)	1.08 (0.82,1.43)	0.571
		Officer	28 (8.3)	37 (7.5)	1.11 (0.67,1.85)	0.684
		Enlisted Flyer	17 (11.3)	29 (15.5)	0.69 (0.36,1.31)	0.259
		Enlisted Groundcrew	52 (13.8)	64 (11.2)	1.26 (0.85,1.86)	0.250
16-25	Total Testosterone	All	72 (8.5)	90 (7.3)	1.17 (0.85,1.61)	0.344
		Officer	29 (8.8)	34 (7.0)	1.28 (0.76,2.14)	0.352
		Enlisted Flyer	12 (8.2)	11 (6.0)	1.39 (0.60,3.25)	0.445
		Enlisted Groundcrew	31 (8.3)	45 (8.0)	1.03 (0.64,1.67)	0.890
16-27	Free Testosterone	All	15 (1.8)	20 (1.6)	1.08 (0.55,2.13)	0.815
		Officer	7 (2.1)	10 (2.1)	1.03 (0.39,2.73)	0.954
		Enlisted Flyer	6 (4.1)	1 (0.5)	7.76 (0.92,65.18)	0.059
		Enlisted Groundcrew	2 (0.5)	9 (1.6)	0.33 (0.07,1.53)	0.157
16-29	Estradiol	All	236 (27.1)	350 (28.0)	0.96 (0.79,1.16)	0.666
		Officer	80 (23.5)	139 (28.1)	0.78 (0.57,1.08)	0.131
		Enlisted Flyer	44 (29.1)	59 (31.6)	0.89 (0.56,1.42)	0.632
		Enlisted Groundcrew	112 (29.6)	152 (26.7)	1.16 (0.87,1.55)	0.319
16-31	LH	All	49 (5.6)	70 (5.6)	1.01 (0.69,1.47)	0.971
		Officer	24 (7.0)	28 (5.7)	1.26 (0.72,2.21)	0.422
		Enlisted Flyer	6 (4.0)	8 (4.3)	0.93 (0.31,2.73)	0.889
		Enlisted Groundcrew	19 (5.0)	34 (6.0)	0.83 (0.47,1.49)	0.538
16-33	FSH	All	72 (8.3)	98 (7.8)	1.06 (0.77,1.46)	0.713
		Officer	39 (11.4)	48 (9.7)	1.20 (0.77,1.88)	0.424
		Enlisted Flyer	17 (11.3)	14 (7.5)	1.57 (0.75,3.29)	0.235
		Enlisted Groundcrew	16 (4.2)	36 (6.3)	0.66 (0.36,1.20)	0.171

**Table G-5. Summary of Unadjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Number (%) Abnormal		Est. Relative Risk (95% C.I.)	p-Value
			RH	C		
17-14	ANA Test	All	432 (52.1)	624 (52.0)	1.00 (0.84,1.19)	0.998
		Officer	168 (51.4)	251 (52.8)	0.94 (0.71,1.25)	0.683
		Enlisted Flyer	73 (51.4)	87 (48.9)	1.11 (0.71,1.72)	0.653
		Enlisted Groundcrew	191 (52.9)	286 (52.4)	1.02 (0.78,1.33)	0.876
17-15	ANA Thyroid Microsomal Antibody	All	24 (2.9)	34 (2.8)	1.02 (0.60,1.73)	0.941
		Officer	11 (3.4)	14 (3.0)	1.15 (0.51,2.56)	0.739
		Enlisted Flyer	3 (2.1)	5 (2.8)	0.75 (0.18,3.18)	0.693
		Enlisted Groundcrew	10 (2.8)	15 (2.8)	1.01 (0.45,2.27)	0.984
17-16	MSK Smooth Muscle Antibody	All	101 (12.2)	145 (12.1)	1.01 (0.77,1.32)	0.959
		Officer	43 (13.2)	49 (10.3)	1.32 (0.85,2.04)	0.217
		Enlisted Flyer	12 (8.5)	29 (16.3)	0.47 (0.23,0.97)	0.040
		Enlisted Groundcrew	46 (12.7)	67 (12.3)	1.04 (0.70,1.56)	0.833
17-17	MSK Mitochondrial Antibody	All	4 (0.5)	2 (0.2)	2.90 (0.53,15.86)	0.203
		Officer	4 (1.2)	1 (0.2)	5.87 (0.65,52.76)	0.114
		Enlisted Flyer	0 (0.0)	1 (0.6)	--	0.999 ^a
		Enlisted Groundcrew	0 (0.0)	0 (0.0)	--	--
17-18	MSK Parietal Antibody	All	36 (4.3)	51 (4.3)	1.02 (0.66,1.58)	0.927
		Officer	14 (4.3)	15 (3.2)	1.37 (0.65,2.88)	0.404
		Enlisted Flyer	5 (3.5)	10 (5.6)	0.61 (0.20,1.84)	0.382
		Enlisted Groundcrew	17 (4.7)	26 (4.8)	0.99 (0.53,1.85)	0.971
17-19	Rheumatoid Factor	All	89 (10.7)	134 (11.2)	0.95 (0.72,1.27)	0.748
		Officer	43 (13.2)	56 (11.8)	1.13 (0.74,1.73)	0.565
		Enlisted Flyer	19 (13.4)	23 (12.9)	1.04 (0.54,2.00)	0.904
		Enlisted Groundcrew	27 (7.5)	55 (10.1)	0.72 (0.45,1.17)	0.184
18-3	Asthma	All	41 (4.8)	44 (3.5)	1.37 (0.89,2.11)	0.158
		Officer	18 (5.3)	17 (3.5)	1.57 (0.80,3.10)	0.191
		Enlisted Flyer	3 (2.0)	8 (4.3)	0.46 (0.12,1.76)	0.257
		Enlisted Groundcrew	20 (5.4)	19 (3.4)	1.64 (0.86,3.11)	0.132
18-4	Bronchitis	All	183 (21.6)	235 (19.2)	1.16 (0.94,1.44)	0.177
		Officer	60 (18.2)	86 (17.8)	1.03 (0.71,1.48)	0.886
		Enlisted Flyer	40 (27.8)	35 (19.1)	1.63 (0.97,2.73)	0.066
		Enlisted Groundcrew	83 (22.3)	114 (20.4)	1.12 (0.81,1.54)	0.496
18-5	Pneumonia	All	85 (10.3)	140 (11.6)	0.87 (0.66,1.16)	0.344
		Officer	34 (10.6)	64 (13.6)	0.75 (0.48,1.17)	0.200
		Enlisted Flyer	19 (13.7)	15 (8.3)	1.74 (0.85,3.57)	0.129
		Enlisted Groundcrew	32 (8.8)	61 (11.0)	0.78 (0.50,1.22)	0.271
18-6	Thorax and Lung Abnormalities	All	102 (11.7)	140 (11.2)	1.05 (0.80,1.38)	0.704
		Officer	31 (9.1)	33 (6.7)	1.40 (0.84,2.33)	0.200
		Enlisted Flyer	29 (19.2)	34 (18.2)	1.07 (0.62,1.85)	0.810
		Enlisted Groundcrew	42 (11.1)	73 (12.8)	0.85 (0.57,1.27)	0.434

**Table G-5. Summary of Unadjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Number (%) Abnormal		Est. Relative Risk (95% C.I.)	p-Value
			RH	C		
18-7	X-ray Interpretation	All	98 (11.3)	118 (9.4)	1.22 (0.92,1.62)	0.166
		Officer	39 (11.4)	42 (8.5)	1.39 (0.88,2.20)	0.160
		Enlisted Flyer	16 (10.6)	17 (9.1)	1.19 (0.58,2.43)	0.643
		Enlisted Groundcrew	43 (11.4)	59 (10.4)	1.12 (0.74,1.70)	0.599

^aP-value determined using a chi-square test with continuity correction because of the sparse number of participants with abnormalities.

--: Relative risk, confidence interval, and p-value are not presented because of the sparse number of participants with abnormalities.

Note: RH = Ranch Hand; C = Comparison.

Table G-6. Summary of Unadjusted Results for Dichotomous Variables – Model 2 (Ranch Hands: Log₂ (Initial Dioxin))

Table Ref.	Clinical Parameter	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
9-3	Self-perception of Health	1.02 (0.85,1.21)	0.859
9-4	Appearance of Illness or Distress	0.71 (0.42,1.20)	0.178
9-5	Relative Age Appearance	1.05 (0.84,1.30)	0.694
9-7	Body Fat	1.00 (0.87,1.15)	0.989
9-9	Erythrocyte Sedimentation Rate	1.17 (0.93,1.46)	0.179
10-3	Skin Neoplasms	0.78 (0.67,0.91)	0.001
10-4	Malignant Skin Neoplasms	0.79 (0.64,0.96)	0.015
10-5	Benign Skin Neoplasms	0.82 (0.69,0.98)	0.022
10-6	Skin Neoplasms of Uncertain Behavior or Unspecified Nature	0.87 (0.44,1.75)	0.696
10-7	Basal Cell Carcinoma (All Sites Combined)	0.67 (0.53,0.85)	<0.001
10-8	Basal Cell Carcinoma (Ear, Face, Head, and Neck)	0.63 (0.48,0.83)	<0.001
10-9	Basal Cell Carcinoma (Trunk)	0.79 (0.56,1.13)	0.184
10-10	Basal Cell Carcinoma (Upper Extremities)	0.51 (0.26,0.99)	0.024
10-11	Basal Cell Carcinoma (Lower Extremities)	1.09 (0.39,3.02)	0.867
10-12	Squamous Cell Carcinoma	0.95 (0.58,1.55)	0.821
10-13	Nonmelanoma	0.73 (0.59,0.90)	0.003
10-14	Melanoma	1.12 (0.69,1.80)	0.660
10-15	Systemic Neoplasms (All Sites Combined)	0.93 (0.80,1.07)	0.308
10-16	Malignant Systemic Neoplasms	0.62 (0.46,0.84)	0.001
10-17	Benign Systemic Neoplasms	1.03 (0.88,1.20)	0.718
10-18	Systemic Neoplasms of Uncertain Behavior or Unspecified Nature	0.84 (0.49,1.47)	0.534
10-19	Malignant Systemic Neoplasms (Eye, Ear, Face, Head, and Neck)	0.50 (0.20,1.23)	0.081
10-20	Malignant Systemic Neoplasms (Oral Cavity, Pharynx, and Larynx)	0.97 (0.39,2.41)	0.953
10-21	Malignant Systemic Neoplasms (Thymus, Heart, and Mediastinum)	--	--
10-22	Malignant Systemic Neoplasms (Thyroid Gland)	0.12 (0.01,2.59)	0.046
10-23	Malignant Systemic Neoplasms (Bronchus and Lung)	0.46 (0.20,1.04)	0.030
10-24	Malignant Systemic Neoplasms (Liver)	1.76 (0.73,4.22)	0.231
10-25	Malignant Systemic Neoplasms (Colon and Rectum)	0.76 (0.39,1.49)	0.405
10-26	Malignant Systemic Neoplasms (Kidney and Bladder)	0.72 (0.37,1.41)	0.312
10-27	Malignant Systemic Neoplasms (Prostate)	0.52 (0.30,0.89)	0.007
10-28	Malignant Systemic Neoplasms (Testicles)	0.65 (0.21,1.98)	0.413
10-29	Malignant Systemic Neoplasms (Connective and Other Soft Tissues)	2.44 (0.70,8.47)	0.168
10-30	Hodgkin's Disease	--	--
10-31	Non-Hodgkin's Lymphoma	--	--
10-32	Other Malignant Systemic Neoplasms of Lymphoid and Histiocytic Tissue	--	--
10-33	All Malignant Skin and Systemic Neoplasms	0.74 (0.62,0.89)	0.001
10-34	All Skin and Systemic Neoplasms	0.84 (0.73,0.97)	0.017
10-36	PSA	0.53 (0.37,0.77)	<0.001
11-3	Inflammatory Diseases	1.03 (0.48,2.18)	0.943
11-4	Hereditary and Degenerative Disorders	1.01 (0.79,1.28)	0.952
11-5	Peripheral Disorders	1.01 (0.86,1.18)	0.915
11-6	Other Neurological Disorders	1.06 (0.90,1.24)	0.483
11-7	Smell	0.94 (0.58,1.51)	0.782
11-8	Visual Fields	3.93 (0.93,16.64)	0.040
11-9	Light Reaction	--	--

**Table G-6. Summary of Unadjusted Results for Dichotomous Variables – Model 2
(Ranch Hands: Log₂ (Initial Dioxin)) (Continued)**

Table Ref.	Clinical Parameter	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
11-10	Ocular Movement	0.77 (0.44,1.32)	0.315
11-11	Facial Sensation	0.45 (0.04,5.19)	0.455
11-12	Jaw Clench	0.59 (0.09,3.87)	0.539
11-13	Smile	1.38 (0.70,2.70)	0.372
11-14	Palpebral Fissure	1.15 (0.50,2.64)	0.750
11-15	Balance	1.27 (0.48,3.35)	0.638
11-16	Speech	0.29 (0.03,2.42)	0.143
11-17	Tongue Position Relative to Midline	0.59 (0.09,3.87)	0.539
11-18	Palate and Uvula Movement	0.59 (0.09,3.87)	0.539
11-19	Cranial Nerve Index	0.86 (0.63,1.17)	0.331
11-20	Neck Range of Motion	0.85 (0.72,1.02)	0.069
11-21	Pinprick	1.10 (0.86,1.41)	0.460
11-22	Light Touch	0.92 (0.66,1.28)	0.616
11-23	Muscle Status	0.87 (0.62,1.23)	0.418
11-24	Patellar Reflex	1.18 (0.82,1.71)	0.374
11-25	Achilles Reflex	1.04 (0.87,1.23)	0.688
11-26	Biceps Reflex	0.72 (0.41,1.24)	0.203
11-27	Babinski Reflex	0.89 (0.28,2.86)	0.848
11-29	Polyneuropathy Prevalence Index	1.09 (0.91,1.31)	0.344
11-30	Multiple Polyneuropathy Index	1.30 (0.98,1.73)	0.076
11-31	Confirmed Polyneuropathy Indicator	1.63 (1.05,2.53)	0.033
11-32	Tremor	1.02 (0.77,1.36)	0.869
11-33	Coordination	0.90 (0.49,1.65)	0.735
11-34	Romberg Sign	1.27 (0.48,3.35)	0.638
11-35	Gait	1.00 (0.74,1.35)	0.998
11-36	CNS Index	1.00 (0.81,1.24)	0.976
12-3	Psychoses	0.90 (0.65,1.24)	0.501
12-4	Alcohol Dependence	1.04 (0.81,1.34)	0.747
12-5	Drug Dependence	--	--
12-6	Anxiety	1.07 (0.92,1.24)	0.360
12-7	Other Neuroses	1.02 (0.89,1.18)	0.743
12-8	SCL-90-R Anxiety	0.98 (0.79,1.21)	0.847
12-9	SCL-90-R Depression	1.10 (0.91,1.32)	0.345
12-10	SCL-90-R Hostility	1.12 (0.88,1.42)	0.377
12-11	SCL-90-R Interpersonal Sensitivity	0.98 (0.81,1.18)	0.798
12-12	SCL-90-R Obsessive-Compulsive Behavior	1.02 (0.85,1.23)	0.854
12-13	SCL-90-R Paranoid Ideation	1.16 (0.91,1.47)	0.227
12-14	SCL-90-R Phobic Anxiety	1.18 (0.97,1.44)	0.100
12-15	SCL-90-R Psychoticism	1.19 (0.99,1.44)	0.065
12-16	SCL-90-R Somatization	0.98 (0.83,1.17)	0.840
12-17	SCL-90-R Global Severity Index (GSI)	1.08 (0.90,1.29)	0.415
12-18	SCL-90-R Positive Symptom Total (PST)	1.04 (0.87,1.25)	0.647
12-19	SCL-90-R Positive Symptom Distress Index (PSDI)	1.00 (0.79,1.26)	0.992
13-3	Uncharacterized Hepatitis	1.10 (0.67,1.80)	0.705
13-4	Jaundice	1.03 (0.21,5.02)	0.973
13-5	Chronic Liver Disease and Cirrhosis (Alcohol-related)	1.06 (0.78,1.45)	0.708
13-6	Chronic Liver Disease and Cirrhosis (Non-alcohol-related)	1.02 (0.61,1.70)	0.949
13-7	Liver Abscess and Sequelae of Chronic Liver Disease	1.99 (0.64,6.25)	0.277
13-8	Enlarged Liver (Hepatomegaly)	0.96 (0.56,1.65)	0.880

**Table G-6. Summary of Unadjusted Results for Dichotomous Variables – Model 2
(Ranch Hands: Log₂ (Initial Dioxin)) (Continued)**

Table Ref.	Clinical Parameter	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
13-9	Other Liver Disorders	1.12 (0.97,1.30)	0.119
13-10	Current Hepatomegaly	0.69 (0.36,1.31)	0.223
13-12	AST	1.08 (0.86,1.36)	0.498
13-14	ALT	1.17 (0.95,1.45)	0.140
13-16	GGT	1.00 (0.81,1.22)	0.964
13-18	Alkaline Phosphatase	0.99 (0.60,1.65)	0.971
13-20	Total Bilirubin	0.77 (0.54,1.09)	0.118
13-21	Direct Bilirubin	--	--
13-23	Lactic Dehydrogenase	0.96 (0.75,1.21)	0.709
13-25	Cholesterol	1.21 (1.01,1.45)	0.036
13-27	HDL Cholesterol	0.86 (0.66,1.12)	0.249
13-29	Cholesterol-HDL Ratio	1.25 (1.09,1.45)	0.002
13-31	Triglycerides	1.09 (0.94,1.27)	0.275
13-33	Creatine Phosphokinase	1.05 (0.83,1.32)	0.698
13-35	Serum Amylase	0.86 (0.58,1.29)	0.458
13-36	Antibodies for Hepatitis A	0.98 (0.85,1.14)	0.830
13-37	Evidence of Prior Hepatitis B	1.06 (0.86,1.31)	0.588
13-38	Current Hepatitis B	0.99 (0.17,5.76)	0.987
13-39	Antibodies for Hepatitis C	0.61 (0.24,1.60)	0.271
13-40	Stool Hemoccult	0.85 (0.59,1.24)	0.390
13-42	Prealbumin	1.44 (0.84,2.47)	0.203
13-44	Albumin	--	--
13-46	α -1-Acid Glycoprotein	1.00 (0.72,1.38)	0.991
13-50	α -2-Macroglobulin	1.22 (0.87,1.71)	0.254
13-52	Apolipoprotein B	1.14 (0.99,1.31)	0.059
13-54	C3 Complement	1.06 (0.45,2.49)	0.898
13-56	C4 Complement	--	--
13-58	Haptoglobin	1.05 (0.91,1.21)	0.506
13-60	Transferrin	0.99 (0.77,1.27)	0.931
14-3	Essential Hypertension	1.06 (0.91,1.23)	0.441
14-4	Heart Disease (Excluding Essential Hypertension)	0.79 (0.68,0.91)	0.001
14-5	Myocardial Infarction	1.01 (0.79,1.28)	0.945
14-6	Stroke or Transient Ischemia Attack	1.22 (0.68,2.16)	0.513
14-8	Systolic Blood Pressure	0.83 (0.69,0.99)	0.031
14-10	Diastolic Blood Pressure	1.04 (0.79,1.37)	0.793
14-11	Heart Sounds	1.01 (0.73,1.40)	0.958
14-12	Overall Electrocardiograph	0.90 (0.77,1.05)	0.171
14-13	Right Bundle Branch Block	0.93 (0.59,1.46)	0.747
14-14	Left Bundle Branch Block	0.21 (0.01,6.22)	0.213
14-15	Non-Specific ST- and T-Wave Changes	0.91 (0.76,1.08)	0.280
14-16	Bradycardia	0.86 (0.44,1.65)	0.631
14-17	Tachycardia	1.38 (0.72,2.68)	0.340
14-18	Arrhythmia	0.81 (0.60,1.10)	0.158
14-19	Evidence of Prior Myocardial Infarction	1.05 (0.75,1.46)	0.793
14-20	ECG: Other Diagnoses	1.53 (0.62,3.79)	0.381
14-21	Funduscopic Examination	0.93 (0.76,1.15)	0.520
14-22	Carotid Bruits	1.06 (0.70,1.59)	0.797
14-23	Radial Pulses	0.58 (0.17,1.99)	0.334
14-24	Femoral Pulses	0.97 (0.61,1.53)	0.890

**Table G-6. Summary of Unadjusted Results for Dichotomous Variables – Model 2
(Ranch Hands: Log₂ (Initial Dioxin)) (Continued)**

Table Ref.	Clinical Parameter	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
14-25	Popliteal Pulses	0.89 (0.57,1.38)	0.601
14-26	Dorsalis Pedis Pulses	0.90 (0.69,1.17)	0.417
14-27	Posterior Tibial Pulses	1.01 (0.77,1.33)	0.925
14-28	Leg Pulses	0.96 (0.77,1.20)	0.739
14-29	Peripheral Pulses	0.96 (0.77,1.19)	0.703
14-30	ICVI Index	0.99 (0.71,1.37)	0.948
15-14	Prothrombin Time	0.66 (0.28,1.58)	0.315
15-15	RBC Morphology	0.94 (0.73,1.21)	0.622
15-18	Absolute Neutrophils (bands) (Zero vs. Nonzero)	0.92 (0.76,1.11)	0.381
15-22	Absolute Eosinophils (Zero vs. Nonzero)	0.95 (0.77,1.17)	0.630
15-24	Absolute Basophils (Zero vs. Nonzero)	0.84 (0.73,0.97)	0.015
16-3	Past Thyroid Disease	1.13 (0.88,1.45)	0.360
16-4	Composite Diabetes Indicator	1.11 (0.94,1.32)	0.231
16-7	Thyroid Gland	0.95 (0.32,2.81)	0.923
16-8	Testicular Examination	0.93 (0.66,1.29)	0.653
16-12	Thyroxine	1.22 (0.79,1.89)	0.375
16-13	Anti-Thyroid Antibodies	0.93 (0.30,2.89)	0.905
16-15	Fasting Glucose	1.13 (0.95,1.34)	0.172
16-17	2-Hour Postprandial Glucose	0.88 (0.71,1.10)	0.267
16-18	Fasting Urinary Glucose	1.19 (0.90,1.57)	0.220
16-19	2-Hour Postprandial Urinary Glucose	0.94 (0.78,1.14)	0.535
16-23	α-1-C Hemoglobin	1.28 (1.05,1.56)	0.013
16-25	Total Testosterone	1.00 (0.80,1.26)	0.973
16-27	Free Testosterone	0.46 (0.21,0.98)	0.019
16-29	Estradiol	1.17 (1.00,1.36)	0.045
16-31	LH	0.93 (0.65,1.32)	0.668
16-33	FSH	0.94 (0.72,1.22)	0.618
17-14	ANA Test	1.08 (0.94,1.24)	0.301
17-15	ANA Thyroid Microsomal Antibody	0.77 (0.47,1.26)	0.272
17-16	MSK Smooth Muscle Antibody	0.80 (0.62,1.02)	0.061
17-17	MSK Mitochondrial Antibody	0.11 (0.01,3.47)	0.034
17-18	MSK Parietal Antibody	0.86 (0.63,1.18)	0.335
17-19	Rheumatoid Factor	0.75 (0.57,0.99)	0.033
18-3	Asthma	1.18 (0.86,1.62)	0.318
18-4	Bronchitis	1.06 (0.89,1.25)	0.513
18-5	Pneumonia	0.81 (0.63,1.05)	0.097
18-6	Thorax and Lung Abnormalities	1.06 (0.86,1.31)	0.573
18-7	X-ray Interpretation	0.89 (0.70,1.15)	0.373

^a Adjusted for percent body fat at the time of the blood measurement for dioxin.

--: Relative risk, confidence interval, and p-value are not presented because of the sparse number of Ranch Hands with abnormalities.

Note: Relative risk for a twofold increase in initial dioxin.

Table G-7. Summary of Unadjusted Results for Dichotomous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category)

Table Ref.	Clinical Parameter	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
9-3	Self-perception of Health	Comparison	1,213	119 (9.8)		
		Background RH	380	34 (9.0)	0.97 (0.65,1.45)	0.880
		Low RH	239	39 (16.3)	1.77 (1.19,2.62)	0.005
		High RH	243	48 (19.8)	2.14 (1.48,3.10)	<0.001
		Low plus High RH	482	87 (18.1)	1.95 (1.44,2.63)	<0.001
9-4	Appearance of Illness or Distress	Comparison	1,213	13 (1.1)		
		Background RH	381	3 (0.8)	0.74 (0.21,2.63)	0.645
		Low RH	239	7 (2.9)	2.78 (1.10,7.04)	0.031
		High RH	243	5 (2.1)	1.92 (0.67,5.45)	0.223
		Low plus High RH	482	12 (2.5)	2.30 (1.03,5.13)	0.041
9-5	Relative Age Appearance	Comparison	1,213	102 (8.4)		
		Background RH	381	39 (10.2)	1.25 (0.84,1.84)	0.271
		Low RH	239	24 (10.0)	1.22 (0.76,1.94)	0.415
		High RH	243	27 (11.1)	1.36 (0.87,2.13)	0.183
		Low plus High RH	482	51 (10.6)	1.29 (0.90,1.83)	0.166
9-7	Body Fat	Comparison	1,213	361 (29.8)		
		Background RH	381	73 (19.2)	0.56 (0.42,0.74)	<0.001
		Low RH	239	85 (35.6)	1.30 (0.97,1.74)	0.076
		High RH	243	83 (34.2)	1.22 (0.91,1.64)	0.175
		Low plus High RH	482	168 (34.9)	1.26 (1.01,1.58)	0.042
9-9	Erythrocyte Sedimentation Rate	Comparison	1,213	85 (7.0)		
		Background RH	381	25 (6.6)	1.03 (0.65,1.64)	0.908
		Low RH	239	21 (8.8)	1.25 (0.75,2.06)	0.392
		High RH	243	24 (9.9)	1.34 (0.83,2.16)	0.236
		Low plus High RH	482	45 (9.3)	1.29 (0.88,1.89)	0.190
10-3	Skin Neoplasms	Comparison	1,133	389 (34.3)		
		Background RH	359	155 (43.2)	1.49 (1.17,1.90)	0.001
		Low RH	210	94 (44.8)	1.54 (1.14,2.07)	0.005
		High RH	229	75 (32.8)	0.91 (0.67,1.23)	0.546
		Low plus High RH	439	169 (38.5)	1.17 (0.93,1.47)	0.183
10-4	Malignant Skin Neoplasms	Comparison	1,133	179 (15.8)		
		Background RH	359	65 (18.1)	1.21 (0.88,1.66)	0.237
		Low RH	210	47 (22.4)	1.52 (1.06,2.19)	0.023
		High RH	229	32 (14.0)	0.84 (0.56,1.27)	0.417
		Low plus High RH	439	79 (18.0)	1.12 (0.83,1.51)	0.457
10-5	Benign Skin Neoplasms	Comparison	1,202	258 (21.5)		
		Background RH	378	115 (30.4)	1.64 (1.26,2.13)	<0.001
		Low RH	233	58 (24.9)	1.21 (0.87,1.67)	0.261
		High RH	242	51 (21.1)	0.96 (0.68,1.34)	0.802
		Low plus High RH	475	109 (23.0)	1.07 (0.83,1.38)	0.592

**Table G-7. Summary of Unadjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
10-6	Skin Neoplasms of Uncertain Behavior or Unspecified Nature	Comparison	1,133	8 (0.7)		
		Background RH	359	2 (0.6)	0.80 (0.17,3.80)	0.777
		Low RH	210	3 (1.4)	2.03 (0.53,7.72)	0.300
		High RH	229	2 (0.9)	1.22 (0.26,5.84)	0.800
		Low plus High RH	439	5 (1.1)	1.56 (0.49,4.91)	0.449
10-7	Basal Cell Carcinoma (All Sites Combined)	Comparison	1,133	150 (13.2)		
		Background RH	359	56 (15.6)	1.24 (0.89,1.73)	0.212
		Low RH	210	42 (20.0)	1.62 (1.11,2.38)	0.012
		High RH	229	23 (10.0)	0.72 (0.45,1.14)	0.160
		Low plus High RH	439	65 (14.8)	1.06 (0.76,1.47)	0.727
10-8	Basal Cell Carcinoma (Ear, Face, Head, and Neck)	Comparison	1,133	115 (10.2)		
		Background RH	359	43 (12.0)	1.21 (0.83,1.76)	0.316
		Low RH	210	33 (15.7)	1.65 (1.08,2.50)	0.020
		High RH	229	17 (7.4)	0.71 (0.41,1.20)	0.199
		Low plus High RH	439	50 (11.4)	1.06 (0.73,1.53)	0.762
10-9	Basal Cell Carcinoma (Trunk)	Comparison	1,133	46 (4.1)		
		Background RH	359	18 (5.0)	1.28 (0.73,2.25)	0.383
		Low RH	210	14 (6.7)	1.67 (0.90,3.10)	0.105
		High RH	229	8 (3.5)	0.83 (0.39,1.79)	0.638
		Low plus High RH	439	22 (5.0)	1.16 (0.68,1.99)	0.589
10-10	Basal Cell Carcinoma (Upper Extremities)	Comparison	1,133	37 (3.3)		
		Background RH	359	11 (3.1)	0.99 (0.50,1.97)	0.981
		Low RH	210	7 (3.3)	1.00 (0.44,2.27)	0.993
		High RH	229	3 (1.3)	0.37 (0.11,1.22)	0.102
		Low plus High RH	439	10 (2.3)	0.60 (0.28,1.29)	0.188
10-11	Basal Cell Carcinoma (Lower Extremities)	Comparison	1,133	5 (0.4)		
		Background RH	359	3 (0.8)	2.07 (0.48,8.80)	0.327
		Low RH	210	1 (0.5)	1.04 (0.12,8.97)	0.972
		High RH	229	1 (0.4)	0.91 (0.10,7.91)	0.932
		Low plus High RH	439	2 (0.5)	0.97 (0.19,5.06)	0.971
10-12	Squamous Cell Carcinoma	Comparison	1,133	20 (1.8)		
		Background RH	359	10 (2.8)	1.69 (0.78,3.66)	0.187
		Low RH	210	6 (2.9)	1.60 (0.63,4.04)	0.320
		High RH	229	4 (1.8)	0.94 (0.32,2.78)	0.907
		Low plus High RH	439	10 (2.3)	1.21 (0.55,2.66)	0.634
10-13	Nonmelanoma	Comparison	1,133	169 (14.9)		
		Background RH	359	62 (17.3)	1.23 (0.89,1.70)	0.203
		Low RH	210	44 (21.0)	1.49 (1.03,2.16)	0.034
		High RH	229	28 (12.2)	0.77 (0.50,1.18)	0.231
		Low plus High RH	439	72 (16.4)	1.06 (0.78,1.44)	0.729

**Table G-7. Summary of Unadjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
10-14	Melanoma	Comparison	1,133	12 (1.1)		
		Background RH	359	7 (2.0)	1.76 (0.68,4.54)	0.240
		Low RH	210	5 (2.4)	2.32 (0.81,6.68)	0.117
		High RH	229	4 (1.8)	1.74 (0.55,5.49)	0.341
		Low plus High RH	439	9 (2.1)	2.00 (0.83,4.83)	0.122
10-15	Systemic Neoplasms (All Sites Combined)	Comparison	1,204	358 (29.7)		
		Background RH	376	109 (29.0)	0.98 (0.76,1.26)	0.864
		Low RH	232	83 (35.8)	1.31 (0.98,1.76)	0.072
		High RH	240	72 (30.0)	1.00 (0.74,1.36)	0.995
		Low plus High RH	472	155 (32.8)	1.14 (0.91,1.44)	0.253
10-16	Malignant Systemic Neoplasms	Comparison	1,211	73 (6.0)		
		Background RH	378	21 (5.6)	0.91 (0.55,1.51)	0.727
		Low RH	234	34 (14.5)	2.65 (1.72,4.09)	<0.001
		High RH	242	11 (4.6)	0.74 (0.39,1.43)	0.374
		Low plus High RH	476	45 (9.5)	1.39 (0.91,2.13)	0.132
10-17	Benign Systemic Neoplasms	Comparison	1,204	289 (24.0)		
		Background RH	376	93 (24.7)	1.05 (0.80,1.38)	0.710
		Low RH	232	58 (25.0)	1.05 (0.76,1.46)	0.760
		High RH	240	63 (26.3)	1.12 (0.81,1.53)	0.500
		Low plus High RH	472	121 (25.6)	1.08 (0.85,1.39)	0.521
10-18	Systemic Neoplasms of Uncertain Behavior or Unspecified Nature	Comparison	1,211	25 (2.1)		
		Background RH	378	8 (2.1)	1.08 (0.48,2.44)	0.845
		Low RH	234	6 (2.6)	1.23 (0.50,3.03)	0.657
		High RH	242	2 (0.8)	0.38 (0.09,1.61)	0.187
		Low plus High RH	476	8 (1.7)	0.67 (0.27,1.67)	0.392
10-19	Malignant Systemic Neoplasms (Eye, Ear, Face, Head, and Neck)	Comparison	1,211	12 (1.0)		
		Background RH	378	3 (0.8)	0.72 (0.20,2.58)	0.612
		Low RH	234	5 (2.1)	2.24 (0.78,6.43)	0.134
		High RH	242	1 (0.4)	0.46 (0.06,3.53)	0.451
		Low plus High RH	476	6 (1.3)	1.00 (0.29,3.41)	0.995
10-20	Malignant Systemic Neoplasms (Oral Cavity, Pharynx, and Larynx)	Comparison	1,211	7 (0.6)		
		Background RH	378	1 (0.3)	0.43 (0.05,3.52)	0.431
		Low RH	234	2 (0.9)	1.51 (0.31,7.30)	0.612
		High RH	242	1 (0.4)	0.75 (0.09,6.18)	0.791
		Low plus High RH	476	3 (0.6)	1.06 (0.25,4.39)	0.938
10-21	Malignant Systemic Neoplasms (Thymus, Heart, and Mediastinum)	Comparison	1,211	0 (0.0)		
		Background RH	378	2 (0.5)	--	0.089 ^b
		Low RH	234	0 (0.0)	--	--
		High RH	242	0 (0.0)	--	--
		Low plus High RH	476	0 (0.0)	--	--

**Table G-7. Summary of Unadjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
10-22	Malignant Systemic Neoplasms (Thyroid Gland)	Comparison	1,211	2 (0.2)		
		Background RH	378	0 (0.0)	--	0.999 ^b
		Low RH	234	2 (0.9)	5.42 (0.76,38.74)	0.092
		High RH	242	0 (0.0)	--	0.999 ^b
		Low plus High RH	476	2 (0.4)	--	0.680 ^b
10-23	Malignant Systemic Neoplasms (Bronchus and Lung)	Comparison	1,211	3 (0.3)		
		Background RH	378	2 (0.5)	2.14 (0.35,12.94)	0.408
		Low RH	234	8 (3.4)	14.26 (3.75,54.20)	<0.001
		High RH	242	0 (0.0)	--	0.999 ^b
		Low plus High RH	476	8 (1.7)	--	0.003 ^b
10-24	Malignant Systemic Neoplasms (Liver)	Comparison	1,211	2 (0.2)		
		Background RH	378	0 (0.0)	--	0.999 ^b
		Low RH	234	0 (0.0)	--	0.999 ^b
		High RH	242	2 (0.8)	5.70 (0.78,41.53)	0.086
		Low plus High RH	476	2 (0.4)	--	0.680 ^b
10-25	Malignant Systemic Neoplasms (Colon and Rectum)	Comparison	1,211	8 (0.7)		
		Background RH	378	1 (0.3)	0.49 (0.06,3.94)	0.500
		Low RH	234	5 (2.1)	3.02 (0.97,9.45)	0.057
		High RH	242	1 (0.4)	0.51 (0.06,4.15)	0.528
		Low plus High RH	476	6 (1.3)	1.22 (0.33,4.51)	0.764
10-26	Malignant Systemic Neoplasms (Kidney and Bladder)	Comparison	1,211	6 (0.5)		
		Background RH	378	4 (1.1)	2.04 (0.57,7.34)	0.273
		Low RH	234	5 (2.1)	4.44 (1.34,14.69)	0.015
		High RH	242	2 (0.8)	1.75 (0.35,8.75)	0.497
		Low plus High RH	476	7 (1.5)	2.76 (0.87,8.80)	0.085
10-27	Malignant Systemic Neoplasms (Prostate)	Comparison	1,211	39 (3.2)		
		Background RH	378	9 (2.4)	0.73 (0.35,1.52)	0.398
		Low RH	234	12 (5.1)	1.63 (0.84,3.16)	0.150
		High RH	242	4 (1.7)	0.51 (0.18,1.44)	0.202
		Low plus High RH	476	16 (3.4)	0.90 (0.46,1.75)	0.757
10-28	Malignant Systemic Neoplasms (Testicles)	Comparison	1,211	0 (0.0)		
		Background RH	378	0 (0.0)	--	--
		Low RH	234	2 (0.9)	--	0.024 ^b
		High RH	242	1 (0.4)	--	0.371 ^b
		Low plus High RH	476	3 (0.6)	--	0.034 ^b
10-29	Malignant Systemic Neoplasms (Connective and Other Soft Tissues)	Comparison	1,211	2 (0.2)		
		Background RH	378	0 (0.0)	--	0.999 ^b
		Low RH	234	0 (0.0)	--	0.999 ^b
		High RH	242	1 (0.4)	2.34 (0.21,26.43)	0.493
		Low plus High RH	476	1 (0.2)	--	0.999 ^b

**Table G-7. Summary of Unadjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
10-30	Hodgkin's Disease	Comparison	1,211	3 (0.3)		
		Background RH	378	1 (0.3)	0.92 (0.09,9.02)	0.945
		Low RH	234	0 (0.0)	--	0.999 ^b
		High RH	242	0 (0.0)	--	0.999 ^b
		Low plus High RH	476	0 (0.0)	--	0.656 ^b
10-31	Non-Hodgkin's Lymphoma	Comparison	1,211	3 (0.3)		
		Background RH	378	1 (0.3)	0.92 (0.09,9.02)	0.944
		Low RH	234	0 (0.0)	--	0.999 ^b
		High RH	242	0 (0.0)	--	0.999 ^b
		Low plus High RH	476	0 (0.0)	--	0.656 ^b
10-32	Other Malignant Systemic Neoplasms of Lymphoid and Histiocytic Tissue	Comparison	1,211	2 (0.2)		
		Background RH	378	2 (0.5)	2.64 (0.37,19.03)	0.336
		Low RH	234	0 (0.0)	--	0.999 ^b
		High RH	242	0 (0.0)	--	0.999 ^b
		Low plus High RH	476	0 (0.0)	--	0.919 ^b
10-33	All Malignant Skin and Systemic Neoplasms	Comparison	1,200	226 (18.8)		
		Background RH	375	76 (20.3)	1.12 (0.83,1.49)	0.464
		Low RH	228	68 (29.8)	1.82 (1.33,2.51)	<0.001
		High RH	241	41 (17.0)	0.87 (0.60,1.26)	0.457
		Low plus High RH	469	109 (23.2)	1.25 (0.96,1.62)	0.103
10-34	All Skin and Systemic Neoplasms	Comparison	1,193	602 (50.5)		
		Background RH	374	211 (56.4)	1.30 (1.03,1.64)	0.030
		Low RH	227	137 (60.4)	1.49 (1.11,1.99)	0.007
		High RH	239	122 (51.1)	1.01 (0.76,1.33)	0.969
		Low plus High RH	466	259 (55.6)	1.22 (0.98,1.51)	0.076
10-36	PSA	Comparison	1,152	71 (6.2)		
		Background RH	365	20 (5.5)	0.85 (0.51,1.42)	0.526
		Low RH	222	22 (9.9)	1.69 (1.02,2.79)	0.040
		High RH	236	12 (5.1)	0.85 (0.45,1.59)	0.603
		Low plus High RH	458	34 (7.4)	1.18 (0.76,1.84)	0.454
11-3	Inflammatory Diseases	Comparison	1,204	1 (0.1)		
		Background RH	380	3 (0.8)	8.82 (0.91,85.93)	0.061
		Low RH	239	2 (0.8)	10.31 (0.93,114.27)	0.057
		High RH	240	2 (0.8)	10.86 (0.97,121.25)	0.053
		Low plus High RH	479	4 (0.8)	10.58 (1.18,95.25)	0.035
11-4	Hereditary and Degenerative Diseases	Comparison	1,211	107 (8.8)		
		Background RH	380	37 (9.7)	1.08 (0.73,1.61)	0.697
		Low RH	239	21 (8.8)	1.00 (0.61,1.63)	0.999
		High RH	240	22 (9.2)	1.07 (0.66,1.73)	0.792
		Low plus High RH	479	43 (9.0)	1.03 (0.71,1.50)	0.864

**Table G-7. Summary of Unadjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
11-5	Peripheral Disorders	Comparison	1,209	233 (19.3)		
		Background RH	377	65 (17.2)	0.91 (0.67,1.23)	0.531
		Low RH	239	61 (25.5)	1.42 (1.03,1.97)	0.033
		High RH	240	59 (24.6)	1.32 (0.95,1.83)	0.097
		Low plus High RH	479	120 (25.1)	1.37 (1.07,1.76)	0.014
11-6	Other Neurological Disorders	Comparison	1,206	204 (16.9)		
		Background RH	377	59 (15.7)	0.88 (0.64,1.21)	0.442
		Low RH	239	55 (23.0)	1.48 (1.06,2.07)	0.023
		High RH	239	58 (24.3)	1.62 (1.16,2.26)	0.005
		Low plus High RH	478	113 (23.6)	1.55 (1.19,2.01)	0.001
11-7	Smell	Comparison	1,209	18 (1.5)		
		Background RH	378	8 (2.1)	1.42 (0.61,3.31)	0.420
		Low RH	238	7 (2.9)	2.01 (0.83,4.86)	0.122
		High RH	239	4 (1.7)	1.14 (0.38,3.40)	0.821
		Low plus High RH	477	11 (2.3)	1.51 (0.69,3.29)	0.300
11-8	Visual Fields	Comparison	1,207	5 (0.4)		
		Background RH	380	1 (0.3)	0.70 (0.08,6.09)	0.746
		Low RH	239	0 (0.0)	--	0.694 ^b
		High RH	240	1 (0.4)	0.92 (0.11,8.03)	0.940
		Low plus High RH	479	1 (0.2)	--	0.853 ^b
11-9	Light Reaction	Comparison	1,209	11 (0.9)		
		Background RH	376	1 (0.3)	0.30 (0.04,2.35)	0.252
		Low RH	239	0 (0.0)	--	0.283 ^b
		High RH	239	0 (0.0)	--	0.283 ^b
		Low plus High RH	478	0 (0.0)	--	0.079 ^b
11-10	Ocular Movement	Comparison	1,211	14 (1.2)		
		Background RH	380	4 (1.1)	0.93 (0.30,2.85)	0.896
		Low RH	239	5 (2.1)	1.82 (0.65,5.10)	0.256
		High RH	240	5 (2.1)	1.79 (0.63,5.04)	0.271
		Low plus High RH	479	10 (2.1)	1.80 (0.79,4.10)	0.159
11-11	Facial Sensation	Comparison	1,210	2 (0.2)		
		Background RH	379	1 (0.3)	1.77 (0.16,19.96)	0.646
		Low RH	239	1 (0.4)	2.46 (0.22,27.39)	0.463
		High RH	240	0 (0.0)	--	0.999 ^b
		Low plus High RH	479	1 (0.2)	--	0.999 ^b
11-12	Jaw Clench	Comparison	1,211	0 (0.0)		
		Background RH	380	1 (0.3)	--	0.540 ^b
		Low RH	239	1 (0.4)	--	0.366 ^b
		High RH	240	0 (0.0)	--	--
		Low plus High RH	479	1 (0.2)	--	0.631 ^b

**Table G-7. Summary of Unadjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
11-13	Smile	Comparison	1,211	4 (0.3)		
		Background RH	380	3 (0.8)	2.61 (0.57,11.87)	0.214
		Low RH	239	2 (0.8)	2.49 (0.45,13.68)	0.295
		High RH	240	2 (0.8)	2.35 (0.42,13.05)	0.328
		Low plus High RH	479	4 (0.8)	2.42 (0.60,9.77)	0.215
11-14	Palpebral Fissure	Comparison	1,211	12 (1.0)		
		Background RH	380	4 (1.1)	1.20 (0.38,3.78)	0.759
		Low RH	239	2 (0.8)	0.81 (0.18,3.66)	0.785
		High RH	240	1 (0.4)	0.37 (0.05,2.91)	0.347
		Low plus High RH	479	3 (0.6)	0.55 (0.14,2.10)	0.381
11-15	Balance	Comparison	1,210	7 (0.6)		
		Background RH	380	5 (1.3)	2.52 (0.78,8.10)	0.121
		Low RH	239	1 (0.4)	0.70 (0.09,5.74)	0.741
		High RH	240	1 (0.4)	0.66 (0.08,5.43)	0.699
		Low plus High RH	479	2 (0.4)	0.68 (0.14,3.31)	0.633
11-16	Speech	Comparison	1,211	9 (0.7)		
		Background RH	380	2 (0.5)	0.81 (0.17,3.83)	0.793
		Low RH	239	2 (0.8)	1.07 (0.23,5.02)	0.929
		High RH	240	0 (0.0)	--	0.374 ^b
		Low plus High RH	479	2 (0.4)	--	0.678 ^b
11-17	Tongue Position Relative to Midline	Comparison	1,211	0 (0.0)		
		Background RH	380	1 (0.3)	--	0.540 ^b
		Low RH	239	1 (0.4)	--	0.366 ^b
		High RH	240	0 (0.0)	--	--
		Low plus High RH	479	1 (0.2)	--	0.631 ^b
11-18	Palate and Uvula Movement	Comparison	1,211	0 (0.0)		
		Background RH	380	0 (0.0)	--	--
		Low RH	239	1 (0.4)	--	0.366 ^b
		High RH	240	0 (0.0)	--	--
		Low plus High RH	479	1 (0.2)	--	0.631 ^b
11-19	Cranial Nerve Index	Comparison	1,207	68 (5.6)		
		Background RH	371	25 (6.7)	1.27 (0.79,2.05)	0.329
		Low RH	236	19 (8.1)	1.45 (0.86,2.47)	0.166
		High RH	236	11 (4.7)	0.78 (0.41,1.51)	0.469
		Low plus High RH	472	30 (6.4)	1.07 (0.68,1.69)	0.776
11-20	Neck Range of Motion	Comparison	1,211	180 (14.9)		
		Background RH	380	60 (15.8)	1.16 (0.84,1.60)	0.366
		Low RH	239	56 (23.4)	1.73 (1.23,2.43)	0.002
		High RH	240	47 (19.6)	1.31 (0.91,1.87)	0.142
		Low plus High RH	479	103 (21.5)	1.50 (1.15,1.97)	0.003

**Table G-7. Summary of Unadjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
11-21	Pinprick	Comparison	1,149	63 (5.5)		
		Background RH	362	19 (5.3)	1.03 (0.61,1.76)	0.900
		Low RH	226	15 (6.6)	1.20 (0.67,2.15)	0.542
		High RH	227	21 (9.3)	1.64 (0.98,2.76)	0.062
		Low plus High RH	453	36 (8.0)	1.40 (0.91,2.16)	0.123
11-22	Light Touch	Comparison	1,149	43 (3.7)		
		Background RH	362	13 (3.6)	1.01 (0.54,1.92)	0.965
		Low RH	226	12 (5.3)	1.42 (0.74,2.74)	0.295
		High RH	227	11 (4.9)	1.25 (0.63,2.46)	0.528
		Low plus High RH	453	23 (5.1)	1.33 (0.79,2.24)	0.283
11-23	Muscle Status	Comparison	1,210	35 (2.9)		
		Background RH	380	14 (3.7)	1.23 (0.65,2.31)	0.530
		Low RH	239	14 (5.9)	2.11 (1.12,3.99)	0.021
		High RH	240	10 (4.2)	1.52 (0.74,3.12)	0.254
		Low plus High RH	479	24 (5.0)	1.79 (1.05,3.06)	0.033
11-24	Patellar Reflex	Comparison	1,209	33 (2.7)		
		Background RH	380	9 (2.4)	0.91 (0.43,1.93)	0.812
		Low RH	238	7 (2.9)	1.06 (0.46,2.44)	0.882
		High RH	240	8 (3.3)	1.17 (0.53,2.58)	0.693
		Low plus High RH	478	15 (3.1)	1.12 (0.60,2.08)	0.727
11-25	Achilles Reflex	Comparison	1,206	197 (16.3)		
		Background RH	379	57 (15.0)	0.99 (0.72,1.37)	0.963
		Low RH	239	46 (19.3)	1.20 (0.84,1.71)	0.325
		High RH	240	47 (19.6)	1.16 (0.81,1.65)	0.425
		Low plus High RH	479	93 (19.4)	1.18 (0.89,1.55)	0.247
11-26	Biceps Reflex	Comparison	1,210	12 (1.0)		
		Background RH	380	2 (0.5)	0.61 (0.14,2.77)	0.524
		Low RH	239	7 (2.9)	2.88 (1.12,7.44)	0.029
		High RH	240	3 (1.3)	1.10 (0.30,3.96)	0.887
		Low plus High RH	479	10 (2.1)	1.78 (0.73,4.35)	0.209
11-27	Babinski Reflex	Comparison	1,208	11 (0.9)		
		Background RH	380	5 (1.3)	1.48 (0.50,4.33)	0.477
		Low RH	239	1 (0.4)	0.46 (0.06,3.55)	0.452
		High RH	240	1 (0.4)	0.45 (0.06,3.50)	0.444
		Low plus High RH	479	2 (0.4)	0.45 (0.10,2.05)	0.303
11-29	Polyneuropathy Prevalence Index	Comparison	1,147	175 (15.3)		
		Background RH	361	47 (13.0)	0.89 (0.63,1.27)	0.530
		Low RH	226	38 (16.8)	1.10 (0.75,1.62)	0.618
		High RH	227	42 (18.5)	1.18 (0.81,1.72)	0.376
		Low plus High RH	453	80 (17.7)	1.14 (0.85,1.53)	0.370

**Table G-7. Summary of Unadjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
11-30	Multiple Polyneuropathy Index	Comparison	1,147	36 (3.1)		
		Background RH	361	14 (3.9)	1.29 (0.68,2.43)	0.432
		Low RH	226	10 (4.4)	1.42 (0.69,2.90)	0.340
		High RH	227	15 (6.6)	2.12 (1.14,3.95)	0.018
		Low plus High RH	453	25 (5.5)	1.73 (1.02,2.94)	0.042
11-31	Confirmed Polyneuropathy Indicator	Comparison	1,141	7 (0.6)		
		Background RH	358	2 (0.6)	1.06 (0.22,5.16)	0.944
		Low RH	224	3 (1.3)	2.08 (0.53,8.17)	0.293
		High RH	223	6 (2.7)	3.89 (1.28,11.86)	0.017
		Low plus High RH	447	9 (2.0)	2.85 (1.02,7.97)	0.047
11-32	Tremor	Comparison	1,211	90 (7.4)		
		Background RH	380	30 (7.9)	1.05 (0.68,1.62)	0.821
		Low RH	239	14 (5.9)	0.78 (0.43,1.39)	0.396
		High RH	240	16 (6.7)	0.90 (0.52,1.57)	0.713
		Low plus High RH	479	30 (6.3)	0.84 (0.55,1.29)	0.417
11-33	Coordination	Comparison	1,209	30 (2.5)		
		Background RH	380	12 (3.2)	1.33 (0.67,2.65)	0.412
		Low RH	239	4 (1.7)	0.66 (0.23,1.90)	0.443
		High RH	240	3 (1.3)	0.48 (0.15,1.59)	0.231
		Low plus High RH	479	7 (1.5)	0.56 (0.24,1.30)	0.181
11-34	Romberg Sign	Comparison	1,210	7 (0.6)		
		Background RH	380	5 (1.3)	2.52 (0.78,8.10)	0.121
		Low RH	239	1 (0.4)	0.70 (0.09,5.74)	0.741
		High RH	240	1 (0.4)	0.66 (0.08,5.43)	0.699
		Low plus High RH	479	2 (0.4)	0.68 (0.14,3.31)	0.633
11-35	Gait	Comparison	1,211	55 (4.5)		
		Background RH	380	23 (6.1)	1.50 (0.91,2.49)	0.115
		Low RH	239	11 (4.6)	0.98 (0.51,1.91)	0.963
		High RH	240	15 (6.3)	1.28 (0.71,2.32)	0.414
		Low plus High RH	479	26 (5.4)	1.12 (0.69,1.83)	0.640
11-36	CNS Index	Comparison	1,210	146 (12.1)		
		Background RH	380	52 (13.7)	1.18 (0.84,1.66)	0.339
		Low RH	239	24 (10.0)	0.81 (0.51,1.28)	0.363
		High RH	240	30 (12.5)	1.02 (0.67,1.56)	0.923
		Low plus High RH	479	54 (11.3)	0.91 (0.65,1.27)	0.576
12-3	Psychoses	Comparison	1,211	47 (3.9)		
		Background RH	381	10 (2.6)	0.71 (0.35,1.43)	0.339
		Low RH	239	12 (5.0)	1.29 (0.67,2.47)	0.447
		High RH	240	12 (5.0)	1.23 (0.64,2.36)	0.535
		Low plus High RH	479	24 (5.0)	1.26 (0.76,2.09)	0.373

**Table G-7. Summary of Unadjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
12-4	Alcohol Dependence	Comparison	1,210	80 (6.6)		
		Background RH	381	24 (6.3)	0.93 (0.58,1.50)	0.767
		Low RH	239	18 (7.5)	1.16 (0.68,1.97)	0.594
		High RH	240	20 (8.3)	1.31 (0.78,2.18)	0.307
		Low plus High RH	479	38 (7.9)	1.23 (0.82,1.84)	0.316
12-5	Drug Dependence	Comparison	1,211	4 (0.3)		
		Background RH	381	2 (0.5)	1.32 (0.24,7.34)	0.749
		Low RH	239	0 (0.0)	--	0.830 ^b
		High RH	240	0 (0.0)	--	0.828 ^b
		Low plus High RH	479	0 (0.0)	--	0.481 ^b
12-6	Anxiety	Comparison	1,208	328 (27.2)		
		Background RH	379	86 (22.7)	0.78 (0.60,1.03)	0.083
		Low RH	238	70 (29.4)	1.12 (0.82,1.52)	0.473
		High RH	239	73 (30.5)	1.18 (0.87,1.60)	0.279
		Low plus High RH	477	143 (30.0)	1.15 (0.91,1.45)	0.240
12-7	Other Neuroses	Comparison	1,202	637 (53.0)		
		Background RH	374	170 (45.5)	0.75 (0.60,0.95)	0.018
		Low RH	237	143 (60.3)	1.34 (1.01,1.79)	0.041
		High RH	237	149 (62.9)	1.48 (1.11,1.97)	0.008
		Low plus High RH	474	292 (61.6)	1.41 (1.13,1.75)	0.002
12-8	SCL-90-R Anxiety	Comparison	1,211	133 (11.0)		
		Background RH	381	27 (7.1)	0.65 (0.42,1.00)	0.051
		Low RH	239	26 (10.9)	0.98 (0.63,1.53)	0.919
		High RH	239	29 (12.1)	1.07 (0.70,1.65)	0.756
		Low plus High RH	478	55 (11.5)	1.02 (0.73,1.43)	0.895
12-9	SCL-90-R Depression	Comparison	1,211	194 (16.0)		
		Background RH	381	43 (11.3)	0.70 (0.49,1.00)	0.052
		Low RH	239	30 (12.6)	0.74 (0.49,1.12)	0.156
		High RH	239	41 (17.2)	1.03 (0.71,1.50)	0.862
		Low plus High RH	478	71 (14.9)	0.88 (0.65,1.18)	0.383
12-10	SCL-90-R Hostility	Comparison	1,211	107 (8.8)		
		Background RH	381	22 (5.8)	0.66 (0.41,1.07)	0.090
		Low RH	239	16 (6.7)	0.73 (0.42,1.26)	0.261
		High RH	239	23 (9.6)	1.05 (0.65,1.70)	0.828
		Low plus High RH	478	39 (8.2)	0.88 (0.60,1.30)	0.512
12-11	SCL-90-R Interpersonal Sensitivity	Comparison	1,211	198 (16.4)		
		Background RH	381	37 (9.7)	0.57 (0.39,0.83)	0.003
		Low RH	239	36 (15.1)	0.90 (0.61,1.32)	0.586
		High RH	239	43 (18.0)	1.08 (0.75,1.56)	0.672
		Low plus High RH	478	79 (16.5)	0.99 (0.74,1.31)	0.923

**Table G-7. Summary of Unadjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
12-12	SCL-90-R Obsessive-Compulsive Behavior	Comparison	1,211	198 (16.4)		
		Background RH	381	43 (11.3)	0.68 (0.48,0.97)	0.032
		Low RH	239	38 (15.9)	0.96 (0.65,1.40)	0.821
		High RH	239	39 (16.3)	0.96 (0.66,1.40)	0.831
		Low plus High RH	478	77 (16.1)	0.96 (0.72,1.28)	0.773
12-13	SCL-90-R Paranoid Ideation	Comparison	1,211	85 (7.0)		
		Background RH	381	17 (4.5)	0.65 (0.38,1.10)	0.110
		Low RH	239	13 (5.4)	0.75 (0.41,1.38)	0.357
		High RH	239	26 (10.9)	1.56 (0.98,2.48)	0.062
		Low plus High RH	478	39 (8.2)	1.08 (0.72,1.64)	0.703
12-14	SCL-90-R Phobic Anxiety	Comparison	1,211	126 (10.4)		
		Background RH	381	22 (5.8)	0.53 (0.33,0.85)	0.009
		Low RH	239	25 (10.5)	1.00 (0.64,1.58)	0.986
		High RH	239	37 (15.5)	1.57 (1.05,2.33)	0.027
		Low plus High RH	478	62 (13.0)	1.25 (0.90,1.74)	0.177
12-15	SCL-90-R Psychoticism	Comparison	1,211	176 (14.5)		
		Background RH	381	33 (8.7)	0.58 (0.39,0.86)	0.006
		Low RH	239	28 (11.7)	0.77 (0.51,1.18)	0.237
		High RH	239	43 (18.0)	1.25 (0.86,1.81)	0.235
		Low plus High RH	478	71 (14.9)	0.98 (0.73,1.33)	0.914
12-16	SCL-90-R Somatization	Comparison	1,211	194 (16.0)		
		Background RH	381	44 (11.6)	0.71 (0.50,1.01)	0.056
		Low RH	239	48 (20.1)	1.31 (0.92,1.86)	0.136
		High RH	239	50 (20.9)	1.34 (0.95,1.91)	0.098
		Low plus High RH	478	98 (20.5)	1.33 (1.01,1.74)	0.042
12-17	SCL-90-R Global Severity Index (GSI)	Comparison	1,211	185 (15.3)		
		Background RH	381	35 (9.2)	0.59 (0.40,0.87)	0.007
		Low RH	239	35 (14.6)	0.94 (0.63,1.39)	0.754
		High RH	239	47 (19.7)	1.30 (0.91,1.86)	0.153
		Low plus High RH	478	82 (17.2)	1.10 (0.83,1.47)	0.500
12-18	SCL-90-R Positive Symptom Total (PST)	Comparison	1,211	204 (16.9)		
		Background RH	381	36 (9.5)	0.54 (0.37,0.78)	0.001
		Low RH	239	40 (16.7)	0.98 (0.68,1.42)	0.921
		High RH	239	45 (18.8)	1.10 (0.77,1.58)	0.604
		Low plus High RH	478	85 (17.8)	1.04 (0.79,1.37)	0.790
12-19	SCL-90-R Positive Symptom Distress Index (PSDI)	Comparison	1,211	78 (6.4)		
		Background RH	381	22 (5.8)	0.90 (0.55,1.47)	0.671
		Low RH	239	19 (8.0)	1.25 (0.74,2.11)	0.399
		High RH	239	28 (11.7)	1.91 (1.21,3.02)	0.006
		Low plus High RH	478	47 (9.8)	1.55 (1.05,2.27)	0.026

**Table G-7. Summary of Unadjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
13-3	Uncharacterized Hepatitis	Comparison	1,206	21 (1.7)		
		Background RH	378	8 (2.1)	1.27 (0.56,2.92)	0.568
		Low RH	237	4 (1.7)	0.96 (0.33,2.82)	0.938
		High RH	241	5 (2.1)	1.15 (0.43,3.10)	0.779
		Low plus High RH	478	9 (1.9)	1.05 (0.48,2.32)	0.902
13-4	Jaundice	Comparison	1,182	34 (2.9)		
		Background RH	370	11 (3.0)	1.05 (0.52,2.11)	0.890
		Low RH	232	0 (0.0)	--	0.017 ^b
		High RH	237	1 (0.4)	0.14 (0.02,1.04)	0.055
		Low plus High RH	469	1 (0.2)	--	0.001 ^b
13-5	Chronic Liver Disease and Cirrhosis (Alcohol-related)	Comparison	1,147	54 (4.7)		
		Background RH	361	16 (4.4)	0.97 (0.55,1.73)	0.924
		Low RH	226	11 (4.9)	1.02 (0.53,1.99)	0.946
		High RH	221	12 (5.4)	1.12 (0.59,2.14)	0.725
		Low plus High RH	447	23 (5.1)	1.07 (0.65,1.77)	0.788
13-6	Chronic Liver Disease and Cirrhosis (Non-alcohol-related)	Comparison	1,212	14 (1.2)		
		Background RH	381	6 (1.6)	1.64 (0.62,4.34)	0.321
		Low RH	239	3 (1.3)	1.01 (0.29,3.58)	0.986
		High RH	243	5 (2.1)	1.52 (0.53,4.32)	0.433
		Low plus High RH	482	8 (1.7)	1.24 (0.50,3.06)	0.639
13-7	Liver Abscess and Sequelae of Chronic Liver Disease	Comparison	1,213	1 (0.1)		
		Background RH	381	0 (0.0)	--	0.999 ^b
		Low RH	239	0 (0.0)	--	0.999 ^b
		High RH	243	1 (0.4)	5.44 (0.33,89.44)	0.236
		Low plus High RH	482	1 (0.2)	--	0.999 ^b
13-8	Enlarged Liver (Hepatomegaly)	Comparison	1,211	26 (2.1)		
		Background RH	381	6 (1.6)	0.75 (0.31,1.86)	0.540
		Low RH	239	2 (0.8)	0.38 (0.09,1.62)	0.191
		High RH	242	6 (2.5)	1.12 (0.46,2.78)	0.798
		Low plus High RH	481	8 (1.7)	0.66 (0.27,1.61)	0.357
13-9	Other Liver Disorders	Comparison	1,202	299 (24.9)		
		Background RH	378	99 (26.2)	1.15 (0.88,1.50)	0.318
		Low RH	238	64 (26.9)	1.09 (0.80,1.50)	0.578
		High RH	243	83 (34.2)	1.49 (1.10,2.00)	0.009
		Low plus High RH	481	147 (30.6)	1.28 (1.01,1.62)	0.042
13-10	Current Hepatomegaly	Comparison	1,194	7 (0.6)		
		Background RH	376	3 (0.8)	1.53 (0.39,5.99)	0.543
		Low RH	236	3 (1.3)	2.10 (0.54,8.23)	0.284
		High RH	241	4 (1.7)	2.58 (0.74,8.97)	0.136
		Low plus High RH	477	7 (1.5)	2.33 (0.80,6.76)	0.119

**Table G-7. Summary of Unadjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
13-12	AST	Comparison	1,194	79 (6.6)		
		Background RH	376	17 (4.5)	0.72 (0.42,1.24)	0.241
		Low RH	236	19 (8.1)	1.21 (0.72,2.04)	0.476
		High RH	240	26 (10.8)	1.60 (1.00,2.56)	0.051
		Low plus High RH	476	45 (9.5)	1.39 (0.95,2.05)	0.094
13-14	ALT	Comparison	1,194	85 (7.1)		
		Background RH	376	17 (4.5)	0.67 (0.39,1.15)	0.145
		Low RH	236	20 (8.5)	1.18 (0.71,1.97)	0.522
		High RH	240	30 (12.5)	1.74 (1.11,2.71)	0.015
		Low plus High RH	476	50 (10.5)	1.43 (0.99,2.08)	0.058
13-16	GGT	Comparison	1,194	117 (9.8)		
		Background RH	376	25 (6.6)	0.70 (0.45,1.10)	0.122
		Low RH	236	29 (12.3)	1.27 (0.82,1.96)	0.283
		High RH	240	33 (13.8)	1.38 (0.91,2.10)	0.127
		Low plus High RH	476	62 (13.0)	1.33 (0.95,1.84)	0.094
13-18	Alkaline Phosphatase	Comparison	1,194	21 (1.8)		
		Background RH	376	12 (3.2)	1.76 (0.85,3.63)	0.127
		Low RH	236	4 (1.7)	0.97 (0.33,2.86)	0.960
		High RH	240	5 (2.1)	1.24 (0.46,3.33)	0.670
		Low plus High RH	476	9 (1.9)	1.10 (0.50,2.43)	0.815
13-20	Total Bilirubin	Comparison	1,194	74 (6.2)		
		Background RH	376	21 (5.6)	0.91 (0.55,1.51)	0.724
		Low RH	236	15 (6.4)	1.02 (0.58,1.81)	0.940
		High RH	240	9 (3.8)	0.58 (0.29,1.18)	0.131
		Low plus High RH	476	24 (5.0)	0.77 (0.47,1.25)	0.286
13-21	Direct Bilirubin	Comparison	1,194	5 (0.4)		
		Background RH	376	1 (0.3)	0.88 (0.10,7.75)	0.906 ^b
		Low RH	236	0 (0.0)	--	0.695 ^b
		High RH	240	0 (0.0)	--	0.686 ^b
		Low plus High RH	476	0 (0.0)	--	0.359 ^b
13-23	Lactic Dehydrogenase	Comparison	1,192	123 (10.3)		
		Background RH	376	36 (9.6)	1.05 (0.71,1.57)	0.794
		Low RH	236	21 (8.9)	0.81 (0.50,1.33)	0.406
		High RH	240	22 (9.2)	0.77 (0.47,1.25)	0.291
		Low plus High RH	476	43 (9.0)	0.79 (0.55,1.15)	0.214
13-25	Cholesterol	Comparison	1,194	177 (14.8)		
		Background RH	376	48 (12.8)	0.80 (0.56,1.12)	0.195
		Low RH	236	34 (14.4)	0.98 (0.66,1.46)	0.915
		High RH	240	48 (20.0)	1.51 (1.06,2.16)	0.023
		Low plus High RH	476	82 (17.2)	1.22 (0.91,1.63)	0.183

**Table G-7. Summary of Unadjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
13-27	HDL Cholesterol	Comparison	1,193	88 (7.4)		
		Background RH	376	33 (8.8)	1.35 (0.88,2.05)	0.170
		Low RH	235	19 (8.1)	1.07 (0.64,1.80)	0.798
		High RH	240	19 (7.9)	0.98 (0.58,1.65)	0.937
		Low plus High RH	475	38 (8.0)	1.02 (0.69,1.53)	0.910
13-29	Cholesterol-HDL Ratio	Comparison	1,193	492 (41.2)		
		Background RH	376	136 (36.2)	0.88 (0.69,1.13)	0.321
		Low RH	235	86 (36.6)	0.80 (0.60,1.07)	0.135
		High RH	240	130 (54.2)	1.57 (1.18,2.08)	0.002
		Low plus High RH	475	216 (45.5)	1.12 (0.90,1.40)	0.295
13-31	Triglycerides	Comparison	1,194	240 (20.1)		
		Background RH	375	53 (14.1)	0.72 (0.52,1.00)	0.051
		Low RH	236	54 (22.9)	1.15 (0.82,1.62)	0.411
		High RH	240	77 (32.1)	1.74 (1.27,2.37)	<0.001
		Low plus High RH	476	131 (27.5)	1.42 (1.10,1.82)	0.006
13-33	Creatine Phosphokinase	Comparison	1,194	111 (9.3)		
		Background RH	376	26 (6.9)	0.81 (0.51,1.26)	0.345
		Low RH	236	20 (8.5)	0.87 (0.53,1.44)	0.599
		High RH	240	25 (10.4)	1.03 (0.65,1.64)	0.905
		Low plus High RH	476	45 (9.5)	0.95 (0.66,1.37)	0.781
13-35	Serum Amylase	Comparison	1,194	38 (3.2)		
		Background RH	376	8 (2.1)	0.61 (0.28,1.32)	0.210
		Low RH	236	11 (4.7)	1.51 (0.76,3.01)	0.236
		High RH	240	6 (2.5)	0.84 (0.35,2.02)	0.697
		Low plus High RH	476	17 (3.6)	1.13 (0.62,2.06)	0.701
13-36	Antibodies for Hepatitis A	Comparison	1,212	405 (33.4)		
		Background RH	381	112 (29.4)	0.84 (0.65,1.08)	0.175
		Low RH	239	84 (35.1)	1.08 (0.80,1.44)	0.619
		High RH	243	84 (34.6)	1.04 (0.78,1.39)	0.784
		Low plus High RH	482	168 (34.9)	1.06 (0.85,1.32)	0.615
13-37	Evidence of Prior Hepatitis B	Comparison	1,211	166 (13.7)		
		Background RH	381	23 (6.0)	0.42 (0.27,0.66)	<0.001
		Low RH	238	26 (10.9)	0.76 (0.49,1.18)	0.229
		High RH	243	27 (11.1)	0.76 (0.49,1.17)	0.214
		Low plus High RH	481	53 (11.0)	0.76 (0.55,1.06)	0.105
13-38	Current Hepatitis B	Comparison	1,213	2 (0.2)		
		Background RH	381	0 (0.0)	--	0.999 ^b
		Low RH	239	1 (0.4)	2.52 (0.23,27.92)	0.453
		High RH	243	0 (0.0)	--	0.999 ^b
		Low plus High RH	482	1 (0.2)	--	0.999 ^b

**Table G-7. Summary of Unadjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
13-39	Antibodies for Hepatitis C	Comparison	1,213	17 (1.4)		
		Background RH	381	5 (1.3)	0.89 (0.32,2.44)	0.819
		Low RH	239	2 (0.8)	0.60 (0.14,2.62)	0.497
		High RH	243	2 (0.8)	0.61 (0.14,2.67)	0.512
		Low plus High RH	482	4 (0.8)	0.61 (0.20,1.81)	0.369
13-40	Stool Hemoccult	Comparison	1,162	50 (4.3)		
		Background RH	365	10 (2.7)	0.68 (0.34,1.35)	0.270
		Low RH	232	11 (4.7)	1.08 (0.55,2.12)	0.814
		High RH	232	8 (3.4)	0.74 (0.35,1.59)	0.443
		Low plus High RH	464	19 (4.1)	0.90 (0.52,1.55)	0.696
13-42	Prealbumin	Comparison	1,194	10 (0.8)		
		Background RH	376	6 (1.6)	1.94 (0.69,5.41)	0.207
		Low RH	236	1 (0.4)	0.50 (0.06,3.95)	0.513
		High RH	240	5 (2.1)	2.50 (0.84,7.42)	0.099
		Low plus High RH	476	6 (1.3)	1.13 (0.33,3.90)	0.849
13-44	Albumin	Comparison	1,194	10 (0.8)		
		Background RH	376	2 (0.5)	0.68 (0.15,3.14)	0.618 ^b
		Low RH	236	0 (0.0)	--	0.325 ^b
		High RH	240	0 (0.0)	--	0.318 ^b
		Low plus High RH	476	0 (0.0)	--	0.099 ^b
13-46	α -1-Acid Glycoprotein	Comparison	1,194	39 (3.3)		
		Background RH	376	13 (3.5)	1.00 (0.52,1.90)	0.992
		Low RH	236	11 (4.7)	1.47 (0.74,2.91)	0.272
		High RH	240	12 (5.0)	1.65 (0.85,3.21)	0.141
		Low plus High RH	476	23 (4.8)	1.56 (0.92,2.64)	0.101
13-50	α -2-Macroglobulin	Comparison	1,194	45 (3.8)		
		Background RH	376	6 (1.6)	0.46 (0.19,1.10)	0.080
		Low RH	236	7 (3.0)	0.75 (0.33,1.69)	0.492
		High RH	240	10 (4.2)	1.00 (0.49,2.03)	0.999
		Low plus High RH	476	17 (3.6)	0.87 (0.49,1.55)	0.632
13-52	Apolipoprotein B	Comparison	1,194	636 (53.3)		
		Background RH	376	174 (46.3)	0.75 (0.60,0.95)	0.017
		Low RH	236	113 (47.9)	0.81 (0.61,1.07)	0.132
		High RH	240	132 (55.0)	1.08 (0.81,1.42)	0.606
		Low plus High RH	476	245 (51.5)	0.93 (0.75,1.16)	0.524
13-54	C3 Complement	Comparison	1,194	26 (2.2)		
		Background RH	376	12 (3.2)	1.28 (0.63,2.57)	0.495
		Low RH	236	1 (0.4)	0.20 (0.03,1.46)	0.111
		High RH	240	2 (0.8)	0.44 (0.10,1.86)	0.261
		Low plus High RH	476	3 (0.6)	0.29 (0.08,1.04)	0.057

**Table G-7. Summary of Unadjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
13-56	C4 Complement	Comparison	1,194	2 (0.2)		
		Background RH	376	2 (0.5)	3.46 (0.47,25.38)	0.222
		Low RH	236	0 (0.0)	--	0.999 ^b
		High RH	240	0 (0.0)	--	0.999 ^b
		Low plus High RH	476	0 (0.0)	--	0.913 ^b
13-58	Haptoglobin	Comparison	1,194	337 (28.2)		
		Background RH	376	115 (30.6)	1.13 (0.88,1.46)	0.338
		Low RH	236	78 (33.1)	1.25 (0.93,1.69)	0.140
		High RH	240	86 (35.8)	1.41 (1.05,1.89)	0.023
		Low plus High RH	476	164 (34.5)	1.33 (1.06,1.67)	0.015
13-60	Transferrin	Comparison	1,194	133 (11.1)		
		Background RH	376	31 (8.2)	0.72 (0.48,1.09)	0.121
		Low RH	236	23 (9.7)	0.86 (0.54,1.37)	0.526
		High RH	240	16 (6.7)	0.57 (0.33,0.97)	0.039
		Low plus High RH	476	39 (8.2)	0.70 (0.48,1.02)	0.062
14-3	Essential Hypertension	Comparison	1,183	490 (41.4)		
		Background RH	372	127 (34.1)	0.86 (0.67,1.11)	0.246
		Low RH	229	94 (41.0)	0.95 (0.71,1.29)	0.758
		High RH	242	120 (49.6)	1.22 (0.91,1.63)	0.177
		Low plus High RH	471	214 (45.4)	1.08 (0.87,1.35)	0.488
14-4	Heart Disease (Excluding Essential Hypertension)	Comparison	1,195	730 (61.1)		
		Background RH	376	259 (68.9)	1.43 (1.11,1.83)	0.005
		Low RH	233	163 (70.0)	1.48 (1.09,2.00)	0.011
		High RH	243	139 (57.2)	0.84 (0.64,1.11)	0.228
		Low plus High RH	476	302 (63.4)	1.11 (0.89,1.39)	0.359
14-5	Myocardial Infarction	Comparison	1,195	98 (8.2)		
		Background RH	376	29 (7.7)	0.98 (0.63,1.51)	0.919
		Low RH	233	19 (8.2)	0.99 (0.59,1.65)	0.958
		High RH	243	24 (9.9)	1.18 (0.73,1.89)	0.496
		Low plus High RH	476	43 (9.0)	1.08 (0.74,1.58)	0.689
14-6	Stroke or Transient Ischemia Attack	Comparison	1,195	14 (1.2)		
		Background RH	376	5 (1.3)	1.13 (0.40,3.18)	0.816
		Low RH	233	1 (0.4)	0.36 (0.05,2.78)	0.330
		High RH	243	5 (2.1)	1.78 (0.63,5.02)	0.275
		Low plus High RH	476	6 (1.3)	0.82 (0.25,2.68)	0.741
14-8	Systolic Blood Pressure	Comparison	1,195	253 (21.2)		
		Background RH	376	74 (19.7)	1.00 (0.75,1.34)	0.998
		Low RH	233	59 (25.3)	1.25 (0.90,1.73)	0.188
		High RH	243	46 (18.9)	0.80 (0.56,1.14)	0.208
		Low plus High RH	476	105 (22.1)	0.99 (0.76,1.29)	0.952

**Table G-7. Summary of Unadjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
14-10	Diastolic Blood Pressure	Comparison	1,195	59 (4.9)		
		Background RH	376	15 (4.0)	0.85 (0.47,1.52)	0.576
		Low RH	233	12 (5.2)	1.04 (0.55,1.96)	0.915
		High RH	243	17 (7.0)	1.37 (0.78,2.41)	0.267
		Low plus High RH	476	29 (6.1)	1.20 (0.75,1.90)	0.447
14-11	Heart Sounds	Comparison	1,195	60 (5.0)		
		Background RH	376	9 (2.4)	0.48 (0.24,0.99)	0.047
		Low RH	233	10 (4.3)	0.84 (0.42,1.67)	0.622
		High RH	243	12 (4.9)	0.94 (0.50,1.79)	0.857
		Low plus High RH	476	22 (4.6)	0.89 (0.54,1.48)	0.656
14-12	Overall Electrocardiograph	Comparison	1,195	373 (31.2)		
		Background RH	376	118 (31.4)	1.06 (0.82,1.36)	0.659
		Low RH	233	72 (30.9)	0.98 (0.72,1.33)	0.883
		High RH	243	74 (30.5)	0.92 (0.68,1.25)	0.602
		Low plus High RH	476	146 (30.7)	0.95 (0.75,1.20)	0.659
14-13	Right Bundle Branch Block	Comparison	1,195	31 (2.6)		
		Background RH	376	9 (2.4)	0.93 (0.44,1.98)	0.852
		Low RH	233	5 (2.1)	0.82 (0.32,2.14)	0.688
		High RH	243	7 (2.9)	1.10 (0.48,2.54)	0.818
		Low plus High RH	476	12 (2.5)	0.96 (0.48,1.89)	0.895
14-14	Left Bundle Branch Block	Comparison	1,195	12 (1.0)		
		Background RH	376	4 (1.1)	1.17 (0.37,3.68)	0.792
		Low RH	233	1 (0.4)	0.42 (0.05,3.23)	0.403
		High RH	243	0 (0.0)	--	0.237 ^b
		Low plus High RH	476	1 (0.2)	--	0.174 ^b
14-15	Non-Specific ST- and T-Wave Changes	Comparison	1,195	218 (18.2)		
		Background RH	376	59 (15.7)	0.91 (0.66,1.25)	0.545
		Low RH	233	47 (20.2)	1.12 (0.78,1.59)	0.537
		High RH	243	50 (20.6)	1.08 (0.76,1.52)	0.677
		Low plus High RH	476	97 (20.4)	1.10 (0.84,1.44)	0.502
14-16	Bradycardia	Comparison	1,195	47 (3.9)		
		Background RH	376	16 (4.3)	0.95 (0.53,1.71)	0.867
		Low RH	233	5 (2.1)	0.55 (0.21,1.39)	0.204
		High RH	243	2 (0.8)	0.23 (0.05,0.95)	0.042
		Low plus High RH	476	7 (1.5)	0.35 (0.14,0.85)	0.020
14-17	Tachycardia	Comparison	1,195	3 (0.3)		
		Background RH	376	1 (0.3)	1.33 (0.14,13.00)	0.806
		Low RH	233	0 (0.0)	--	0.999 ^b
		High RH	243	4 (1.6)	5.30 (1.15,24.53)	0.033
		Low plus High RH	476	4 (0.8)	--	0.206 ^b

**Table G-7. Summary of Unadjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
14-18	Arrhythmia	Comparison	1,195	65 (5.4)		
		Background RH	376	18 (4.8)	0.90 (0.53,1.54)	0.703
		Low RH	233	19 (8.2)	1.54 (0.90,2.61)	0.114
		High RH	243	13 (5.3)	0.96 (0.52,1.77)	0.886
		Low plus High RH	476	32 (6.7)	1.21 (0.77,1.88)	0.409
14-19	Evidence of Prior Myocardial Infarction	Comparison	1,195	53 (4.4)		
		Background RH	376	12 (3.2)	0.75 (0.39,1.42)	0.374
		Low RH	233	11 (4.7)	1.06 (0.54,2.06)	0.867
		High RH	243	10 (4.1)	0.88 (0.44,1.76)	0.722
		Low plus High RH	476	21 (4.4)	0.96 (0.57,1.62)	0.891
14-20	ECG: Other Diagnoses	Comparison	1,195	1 (0.1)		
		Background RH	376	1 (0.3)	2.59 (0.16,41.85)	0.503 ^b
		Low RH	233	0 (0.0)	--	0.999 ^b
		High RH	243	2 (0.8)	12.49 (1.10,142.56)	0.042
		Low plus High RH	476	2 (0.4)	--	0.409 ^b
14-21	Funduscopic Examination	Comparison	1,194	149 (12.5)		
		Background RH	375	43 (11.5)	0.99 (0.69,1.43)	0.963
		Low RH	233	30 (12.9)	1.02 (0.67,1.56)	0.921
		High RH	243	32 (13.2)	0.98 (0.65,1.49)	0.933
		Low plus High RH	476	62 (13.0)	1.00 (0.73,1.38)	0.993
14-22	Carotid Bruits	Comparison	1,195	31 (2.6)		
		Background RH	376	9 (2.4)	0.93 (0.44,1.98)	0.853
		Low RH	233	5 (2.1)	0.82 (0.32,2.14)	0.687
		High RH	243	8 (3.3)	1.27 (0.57,2.80)	0.561
		Low plus High RH	476	13 (2.7)	1.02 (0.53,2.00)	0.943
14-23	Radial Pulses	Comparison	1,195	4 (0.3)		
		Background RH	376	4 (1.1)	2.78 (0.69,11.27)	0.153
		Low RH	233	2 (0.9)	2.64 (0.48,14.54)	0.264
		High RH	243	1 (0.4)	1.41 (0.16,12.80)	0.759
		Low plus High RH	476	3 (0.6)	1.92 (0.40,9.18)	0.414
14-24	Femoral Pulses	Comparison	1,194	15 (1.3)		
		Background RH	376	7 (1.9)	1.39 (0.56,3.45)	0.481
		Low RH	233	6 (2.6)	2.10 (0.81,5.48)	0.128
		High RH	243	6 (2.5)	2.13 (0.81,5.56)	0.125
		Low plus High RH	476	12 (2.5)	2.11 (0.98,4.56)	0.056
14-25	Popliteal Pulses	Comparison	1,193	28 (2.3)		
		Background RH	376	9 (2.4)	0.94 (0.44,2.03)	0.879
		Low RH	233	7 (3.0)	1.31 (0.56,3.03)	0.535
		High RH	243	7 (2.9)	1.33 (0.57,3.08)	0.512
		Low plus High RH	476	14 (2.9)	1.32 (0.69,2.53)	0.410

**Table G-7. Summary of Unadjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
14-26	Dorsalis Pedis Pulses	Comparison	1,193	95 (8.0)		
		Background RH	376	29 (7.7)	0.91 (0.59,1.40)	0.664
		Low RH	233	22 (9.4)	1.22 (0.75,1.98)	0.429
		High RH	243	18 (7.4)	0.98 (0.58,1.65)	0.931
		Low plus High RH	476	40 (8.4)	1.09 (0.74,1.61)	0.670
14-27	Posterior Tibial Pulses	Comparison	1,191	63 (5.3)		
		Background RH	376	22 (5.9)	1.04 (0.63,1.73)	0.865
		Low RH	233	18 (7.7)	1.52 (0.88,2.61)	0.135
		High RH	243	16 (6.6)	1.34 (0.76,2.36)	0.320
		Low plus High RH	476	34 (7.1)	1.42 (0.92,2.19)	0.113
14-28	Leg Pulses	Comparison	1,191	122 (10.2)		
		Background RH	376	39 (10.4)	0.95 (0.65,1.40)	0.812
		Low RH	233	29 (12.4)	1.26 (0.82,1.94)	0.298
		High RH	243	24 (9.9)	1.01 (0.64,1.61)	0.957
		Low plus High RH	476	53 (11.1)	1.13 (0.80,1.59)	0.498
14-29	Peripheral Pulses	Comparison	1,191	125 (10.5)		
		Background RH	376	40 (10.6)	0.95 (0.65,1.39)	0.797
		Low RH	233	30 (12.9)	1.27 (0.83,1.95)	0.266
		High RH	243	25 (10.3)	1.04 (0.66,1.63)	0.880
		Low plus High RH	476	55 (11.6)	1.15 (0.82,1.61)	0.431
14-30	ICVI Index	Comparison	1,195	43 (3.6)		
		Background RH	375	9 (2.4)	0.65 (0.31,1.35)	0.249
		Low RH	233	9 (3.9)	1.08 (0.52,2.24)	0.839
		High RH	243	14 (5.8)	1.66 (0.89,3.09)	0.112
		Low plus High RH	476	23 (4.8)	1.34 (0.79,2.27)	0.272
15-14	Prothrombin Time	Comparison	987	13 (1.3)		
		Background RH	309	6 (1.9)	1.64 (0.61,4.37)	0.327
		Low RH	182	3 (1.7)	1.17 (0.33,4.19)	0.807
		High RH	193	1 (0.5)	0.34 (0.04,2.62)	0.297
		Low plus High RH	375	4 (1.1)	0.62 (0.17,2.23)	0.461
15-15	RBC Morphology	Comparison	1,211	73 (6.0)		
		Background RH	381	24 (6.3)	1.12 (0.69,1.81)	0.639
		Low RH	239	23 (9.6)	1.63 (1.00,2.67)	0.051
		High RH	239	16 (6.7)	1.05 (0.60,1.85)	0.862
		Low plus High RH	478	39 (8.2)	1.31 (0.87,1.98)	0.196
15-18	Absolute Neutrophils (bands) (Zero vs. Nonzero)	Comparison	1,211	209 (17.3)		
		Background RH	381	65 (17.1)	0.98 (0.72,1.34)	0.908
		Low RH	239	43 (18.0)	1.05 (0.73,1.51)	0.781
		High RH	239	38 (15.9)	0.91 (0.62,1.33)	0.625
		Low plus High RH	478	81 (17.0)	0.98 (0.74,1.30)	0.881

**Table G-7. Summary of Unadjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
15-22	Absolute Eosinophils (Zero vs. Nonzero)	Comparison	1,211	147 (12.1)		
		Background RH	381	44 (11.6)	0.96 (0.67,1.38)	0.833
		Low RH	239	33 (13.8)	1.15 (0.77,1.73)	0.487
		High RH	239	28 (11.7)	0.95 (0.61,1.46)	0.798
		Low plus High RH	478	61 (12.8)	1.04 (0.76,1.44)	0.789
15-24	Absolute Basophils (Zero vs. Nonzero)	Comparison	1,211	649 (53.6)		
		Background RH	381	213 (55.9)	1.09 (0.86,1.38)	0.459
		Low RH	239	147 (61.5)	1.39 (1.04,1.84)	0.025
		High RH	239	130 (54.4)	1.04 (0.78,1.37)	0.796
		Low plus High RH	478	277 (58.0)	1.20 (0.97,1.49)	0.098
16-3	Thyroid Disease	Comparison	1,208	102 (8.4)		
		Background RH	378	30 (7.9)	0.97 (0.64,1.49)	0.906
		Low RH	237	15 (6.3)	0.73 (0.41,1.27)	0.263
		High RH	241	20 (8.3)	0.94 (0.57,1.56)	0.825
		Low plus High RH	478	35 (7.3)	0.83 (0.55,1.24)	0.362
16-4	Composite Diabetes Indicator	Comparison	1,195	199 (16.7)		
		Background RH	379	37 (9.8)	0.67 (0.45,0.98)	0.041
		Low RH	235	49 (20.9)	1.27 (0.88,1.84)	0.202
		High RH	240	57 (23.8)	1.33 (0.94,1.90)	0.111
		Low plus High RH	475	106 (22.3)	1.30 (0.99,1.72)	0.064
16-7	Thyroid Gland	Comparison	1,165	16 (1.4)		
		Background RH	369	4 (1.1)	0.82 (0.27,2.47)	0.718
		Low RH	233	1 (0.4)	0.31 (0.04,2.32)	0.253
		High RH	234	1 (0.4)	0.30 (0.04,2.27)	0.242
		Low plus High RH	467	2 (0.4)	0.30 (0.07,1.32)	0.112
16-8	Testicular Examination	Comparison	1,199	47 (3.9)		
		Background RH	376	14 (3.7)	0.89 (0.49,1.65)	0.722
		Low RH	237	15 (6.3)	1.68 (0.92,3.06)	0.091
		High RH	241	9 (3.7)	1.00 (0.48,2.07)	0.994
		Low plus High RH	478	24 (5.0)	1.29 (0.77,2.16)	0.333
16-12	Thyroxine	Comparison	1,161	31 (2.7)		
		Background RH	367	13 (3.5)	1.40 (0.72,2.71)	0.325
		Low RH	233	3 (1.3)	0.47 (0.14,1.55)	0.215
		High RH	234	7 (3.0)	1.08 (0.47,2.49)	0.858
		Low plus High RH	467	10 (2.1)	0.71 (0.33,1.54)	0.390
16-13	Anti-Thyroid Antibodies	Comparison	1,161	7 (0.6)		
		Background RH	367	3 (0.8)	1.20 (0.30,4.69)	0.798
		Low RH	233	1 (0.4)	0.73 (0.09,5.96)	0.768
		High RH	234	1 (0.4)	0.80 (0.10,6.56)	0.834
		Low plus High RH	467	2 (0.4)	0.76 (0.16,3.70)	0.736

**Table G-7. Summary of Unadjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
16-15	Fasting Glucose	Comparison	1,212	203 (16.7)		
		Background RH	381	48 (12.6)	0.89 (0.63,1.26)	0.517
		Low RH	238	44 (18.5)	1.07 (0.73,1.56)	0.721
		High RH	242	58 (24.0)	1.35 (0.95,1.91)	0.097
		Low plus High RH	480	102 (21.3)	1.20 (0.91,1.59)	0.200
16-17	2-Hour Postprandial Glucose	Comparison	996	155 (15.6)		
		Background RH	342	47 (13.7)	0.98 (0.68,1.40)	0.906
		Low RH	186	35 (18.8)	1.27 (0.84,1.92)	0.260
		High RH	183	31 (16.9)	1.00 (0.65,1.54)	0.999
		Low plus High RH	369	66 (17.9)	1.13 (0.82,1.56)	0.468
16-18	Fasting Urinary Glucose	Comparison	1,212	51 (4.2)		
		Background RH	381	7 (1.8)	0.53 (0.24,1.19)	0.124
		Low RH	238	9 (3.8)	0.81 (0.38,1.70)	0.571
		High RH	242	18 (7.4)	1.51 (0.85,2.69)	0.160
		Low plus High RH	480	27 (5.6)	1.11 (0.66,1.85)	0.696
16-19	2-Hour Postprandial Urinary Glucose	Comparison	994	214 (21.5)		
		Background RH	341	85 (24.9)	1.20 (0.90,1.60)	0.222
		Low RH	185	52 (28.1)	1.43 (1.00,2.03)	0.050
		High RH	183	42 (23.0)	1.10 (0.75,1.60)	0.636
		Low plus High RH	368	94 (25.5)	1.25 (0.95,1.65)	0.118
16-23	α -1-C Hemoglobin	Comparison	1,212	125 (10.3)		
		Background RH	381	25 (6.6)	0.75 (0.47,1.18)	0.210
		Low RH	238	25 (10.5)	0.95 (0.60,1.53)	0.841
		High RH	242	45 (18.6)	1.73 (1.17,2.55)	0.006
		Low plus High RH	480	70 (14.6)	1.29 (0.92,1.80)	0.138
16-25	Total Testosterone	Comparison	1,189	88 (7.4)		
		Background RH	372	23 (6.2)	1.04 (0.64,1.69)	0.878
		Low RH	234	20 (8.6)	1.08 (0.64,1.84)	0.767
		High RH	238	28 (11.8)	1.40 (0.88,2.25)	0.156
		Low plus High RH	472	48 (10.2)	1.23 (0.84,1.82)	0.285
16-27	Free Testosterone	Comparison	1,189	20 (1.7)		
		Background RH	372	5 (1.3)	0.94 (0.35,2.55)	0.906
		Low RH	234	8 (3.4)	1.95 (0.84,4.52)	0.120
		High RH	238	1 (0.4)	0.21 (0.03,1.57)	0.128
		Low plus High RH	472	9 (1.9)	0.63 (0.20,1.99)	0.431
16-29	Estradiol	Comparison	1,213	343 (28.3)		
		Background RH	381	102 (26.8)	0.96 (0.74,1.25)	0.774
		Low RH	239	59 (24.7)	0.82 (0.60,1.13)	0.234
		High RH	243	73 (30.0)	1.05 (0.78,1.43)	0.731
		Low plus High RH	482	132 (27.4)	0.93 (0.74,1.18)	0.566

**Table G-7. Summary of Unadjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
16-31	LH	Comparison	1,213	67 (5.5)		
		Background RH	381	27 (7.1)	1.27 (0.79,2.02)	0.322
		Low RH	239	12 (5.0)	0.91 (0.48,1.71)	0.770
		High RH	243	9 (3.7)	0.68 (0.33,1.38)	0.280
		Low plus High RH	482	21 (4.4)	0.78 (0.47,1.30)	0.345
16-33	FSH	Comparison	1,213	93 (7.7)		
		Background RH	381	35 (9.2)	1.22 (0.81,1.84)	0.341
		Low RH	239	20 (8.4)	1.10 (0.66,1.82)	0.713
		High RH	243	16 (6.6)	0.85 (0.49,1.47)	0.557
		Low plus High RH	482	36 (7.5)	0.96 (0.64,1.44)	0.860
17-14	ANA Test	Comparison	1,164	606 (52.1)		
		Background RH	371	199 (53.6)	1.05 (0.83,1.33)	0.674
		Low RH	222	105 (47.3)	0.83 (0.62,1.11)	0.202
		High RH	231	127 (55.0)	1.14 (0.85,1.51)	0.380
		Low plus High RH	453	232 (51.2)	0.97 (0.78,1.21)	0.810
17-15	ANA Thyroid Microsomal Antibody	Comparison	1,164	34 (2.9)		
		Background RH	371	12 (3.2)	1.13 (0.58,2.22)	0.717
		Low RH	222	7 (3.2)	1.08 (0.47,2.46)	0.862
		High RH	231	5 (2.2)	0.72 (0.28,1.88)	0.506
		Low plus High RH	453	12 (2.7)	0.88 (0.45,1.73)	0.709
17-16	MSK Smooth Muscle Antibody	Comparison	1,164	141 (12.1)		
		Background RH	371	52 (14.0)	1.23 (0.87,1.74)	0.235
		Low RH	222	30 (13.5)	1.12 (0.73,1.71)	0.601
		High RH	231	19 (8.2)	0.63 (0.38,1.04)	0.071
		Low plus High RH	453	49 (10.8)	0.83 (0.59,1.19)	0.315
17-17	MSK Mitochondrial Antibody	Comparison	1,164	2 (0.2)		
		Background RH	371	2 (0.5)	3.74 (0.51,27.25)	0.193
		Low RH	222	2 (0.9)	4.91 (0.68,35.44)	0.114
		High RH	231	0 (0.0)	--	0.999 ^b
		Low plus High RH	453	2 (0.4)	--	0.672 ^b
17-18	MSK Parietal Antibody	Comparison	1,164	50 (4.3)		
		Background RH	371	9 (2.4)	0.61 (0.29,1.25)	0.179
		Low RH	222	16 (7.2)	1.68 (0.94,3.02)	0.082
		High RH	231	10 (4.3)	0.93 (0.46,1.87)	0.843
		Low plus High RH	453	26 (5.7)	1.24 (0.75,2.05)	0.392
17-19	Rheumatoid Factor	Comparison	1,164	130 (11.2)		
		Background RH	371	46 (12.4)	1.15 (0.80,1.65)	0.458
		Low RH	222	27 (12.2)	1.10 (0.70,1.70)	0.686
		High RH	231	15 (6.5)	0.54 (0.31,0.95)	0.032
		Low plus High RH	453	42 (9.3)	0.77 (0.52,1.12)	0.170

**Table G-7. Summary of Unadjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
18-3	Asthma	Comparison	1,208	42 (3.5)		
		Background RH	377	19 (5.0)	1.47 (0.84,2.58)	0.174
		Low RH	235	10 (4.3)	1.23 (0.61,2.50)	0.559
		High RH	240	11 (4.6)	1.33 (0.67,2.64)	0.408
		Low plus High RH	475	21 (4.4)	1.28 (0.75,2.19)	0.363
18-4	Bronchitis	Comparison	1,188	230 (19.4)		
		Background RH	372	84 (22.6)	1.22 (0.92,1.62)	0.174
		Low RH	228	44 (19.3)	1.00 (0.70,1.43)	0.980
		High RH	239	54 (22.6)	1.21 (0.87,1.70)	0.262
		Low plus High RH	467	98 (21.0)	1.10 (0.84,1.44)	0.479
18-5	Pneumonia	Comparison	1,168	134 (11.5)		
		Background RH	361	38 (10.5)	0.93 (0.63,1.36)	0.708
		Low RH	222	27 (12.2)	1.06 (0.68,1.65)	0.790
		High RH	236	19 (8.1)	0.66 (0.40,1.09)	0.107
		Low plus High RH	458	46 (10.0)	0.83 (0.58,1.19)	0.315
18-6	Thorax and Lung Abnormalities	Comparison	1,213	137 (11.3)		
		Background RH	381	39 (10.2)	0.82 (0.56,1.20)	0.304
		Low RH	239	31 (13.0)	1.19 (0.79,1.82)	0.408
		High RH	243	31 (12.8)	1.24 (0.82,1.89)	0.313
		Low plus High RH	482	62 (12.9)	1.22 (0.88,1.68)	0.232
18-7	X-ray Interpretation	Comparison	1,213	116 (9.6)		
		Background RH	381	53 (13.9)	1.56 (1.10,2.21)	0.013
		Low RH	239	26 (10.9)	1.15 (0.73,1.80)	0.546
		High RH	241	17 (7.1)	0.70 (0.41,1.20)	0.196
		Low plus High RH	480	43 (9.0)	0.90 (0.62,1.31)	0.576

^a Adjusted for percent body fat at the time of the blood measurement for dioxin.

^b P-value determined using a chi-square test with continuity correction because of the sparse number of participants with abnormalities.

--: Relative risk, confidence interval, and p-value are not presented because of the sparse number of participants with abnormalities.

Note: Relative risk and confidence interval relative to Comparisons.

RH = Ranch Hand.

Comparison: 1987 Dioxin ≤ 10 ppt.

Background: (Ranch Hand): 1987 Dioxin ≤ 10 ppt.

Low (Ranch Hand): 1987 Dioxin > 10 ppt, 10 ppt < Initial Dioxin ≤ 94 ppt.

High (Ranch Hand): 1987 Dioxin > 10 ppt, Initial Dioxin > 94 ppt.

Table G-8. Summary of Unadjusted Results for Dichotomous Variables – Model 4 (Ranch Hands: Log₂ (1987 Dioxin + 1))

Table Ref.	Clinical Parameter	Est. Relative Risk (95% C.I.)	p-Value
9-3	Self-perception of Health	1.22 (1.08,1.39)	0.002
9-4	Appearance of Illness or Distress	1.09 (0.78,1.52)	0.631
9-5	Relative Age Appearance	0.97 (0.83,1.12)	0.654
9-7	Body Fat	1.26 (1.14,1.40)	<0.001
9-9	Erythrocyte Sedimentation Rate	1.18 (1.01,1.39)	0.040
10-3	Skin Neoplasms	0.88 (0.80,0.97)	0.012
10-4	Malignant Skin Neoplasms	0.92 (0.81,1.04)	0.187
10-5	Benign Skin Neoplasms	0.85 (0.77,0.95)	0.003
10-6	Skin Neoplasms of Uncertain Behavior or Unspecified Nature	1.16 (0.72,1.86)	0.542
10-7	Basal Cell Carcinoma (All Sites Combined)	0.87 (0.76,0.99)	0.037
10-8	Basal Cell Carcinoma (Ear, Face, Head, and Neck)	0.84 (0.72,0.98)	0.021
10-9	Basal Cell Carcinoma (Trunk)	0.96 (0.77,1.19)	0.695
10-10	Basal Cell Carcinoma (Upper Extremities)	0.77 (0.56,1.07)	0.107
10-11	Basal Cell Carcinoma (Lower Extremities)	0.85 (0.45,1.59)	0.597
10-12	Squamous Cell Carcinoma	0.95 (0.70,1.29)	0.744
10-13	Nonmelanoma	0.89 (0.78,1.01)	0.074
10-14	Melanoma	1.05 (0.76,1.46)	0.761
10-15	Systemic Neoplasms (All Sites Combined)	1.02 (0.92,1.12)	0.734
10-16	Malignant Systemic Neoplasms	0.96 (0.81,1.14)	0.641
10-17	Benign Systemic Neoplasms	1.03 (0.93,1.14)	0.582
10-18	Systemic Neoplasms of Uncertain Behavior or Unspecified Nature	0.84 (0.59,1.20)	0.329
10-19	Malignant Systemic Neoplasms (Eye, Ear, Face, Head, and Neck)	0.85 (0.53,1.36)	0.494
10-20	Malignant Systemic Neoplasms (Oral Cavity, Pharynx, and Larynx)	1.23 (0.66,2.29)	0.526
10-21	Malignant Systemic Neoplasms (Thymus, Heart, and Mediastinum)	0.33 (0.12,0.92)	0.038
10-22	Malignant Systemic Neoplasms (Thyroid Gland)	0.90 (0.34,2.40)	0.832
10-23	Malignant Systemic Neoplasms (Bronchus and Lung)	0.98 (0.64,1.50)	0.915
10-24	Malignant Systemic Neoplasms (Liver)	2.10 (0.92,4.78)	0.080
10-25	Malignant Systemic Neoplasms (Colon and Rectum)	1.18 (0.74,1.91)	0.495
10-26	Malignant Systemic Neoplasms (Kidney and Bladder)	1.03 (0.69,1.53)	0.902
10-27	Malignant Systemic Neoplasms (Prostate)	0.82 (0.62,1.10)	0.182
10-28	Malignant Systemic Neoplasms (Testicles)	1.22 (0.59,2.50)	0.599
10-29	Malignant Systemic Neoplasms (Connective and Other Soft Tissues)	2.36 (0.73,7.65)	0.151
10-30	Hodgkin's Disease	0.67 (0.15,2.97)	0.583
10-31	Non-Hodgkin's Lymphoma	0.60 (0.13,2.70)	0.491
10-32	Other Malignant Systemic Neoplasms of Lymphoid and Histiocytic Tissue	0.68 (0.24,1.96)	0.466
10-33	All Malignant Skin and Systemic Neoplasms	0.94 (0.84,1.05)	0.281
10-34	All Skin and Systemic Neoplasms	0.93 (0.85,1.02)	0.149
10-36	PSA	0.91 (0.75,1.10)	0.313
11-3	Inflammatory Diseases	0.97 (0.58,1.63)	0.920
11-4	Hereditary and Degenerative Disorders	0.96 (0.82,1.12)	0.590
11-5	Peripheral Disorders	1.15 (1.04,1.29)	0.010
11-6	Other Neurological Disorders	1.13 (1.01,1.26)	0.038
11-7	Smell	0.89 (0.65,1.23)	0.481
11-8	Visual Fields	1.43 (0.62,3.31)	0.421
11-9	Light Reaction	0.77 (0.18,3.29)	0.715

**Table G-8. Summary of Unadjusted Results for Dichotomous Variables – Model 4
(Ranch Hands: Log₂ (1987 Dioxin + 1)) (Continued)**

Table Ref.	Clinical Parameter	Est. Relative Risk (95% C.I.)	p-Value
11-10	Ocular Movement	1.09 (0.77,1.54)	0.643
11-11	Facial Sensation	0.75 (0.27,2.11)	0.572
11-12	Jaw Clench	0.92 (0.35,2.44)	0.864
11-13	Smile	1.16 (0.72,1.88)	0.541
11-14	Palpebral Fissure	1.05 (0.64,1.73)	0.840
11-15	Balance	0.88 (0.52,1.50)	0.642
11-16	Speech	0.77 (0.37,1.59)	0.462
11-17	Tongue Position Relative to Midline	0.92 (0.35,2.44)	0.864
11-18	Palate and Uvula Movement	1.13 (0.31,4.05)	0.857
11-19	Cranial Nerve Index	0.93 (0.77,1.13)	0.462
11-20	Neck Range of Motion	1.03 (0.92,1.15)	0.632
11-21	Pinprick	1.15 (0.96,1.37)	0.137
11-22	Light Touch	1.02 (0.81,1.28)	0.865
11-23	Muscle Status	1.02 (0.82,1.27)	0.863
11-24	Patellar Reflex	1.08 (0.83,1.42)	0.568
11-25	Achilles Reflex	1.07 (0.95,1.21)	0.250
11-26	Biceps Reflex	1.16 (0.80,1.68)	0.437
11-27	Babinski Reflex	0.58 (0.32,1.03)	0.056
11-29	Polyneuropathy Prevalence Index	1.09 (0.96,1.24)	0.198
11-30	Multiple Polyneuropathy Index	1.19 (0.96,1.46)	0.110
11-31	Confirmed Polyneuropathy Indicator	1.80 (1.26,2.58)	0.002
11-32	Tremor	0.94 (0.79,1.13)	0.527
11-33	Coordination	0.81 (0.58,1.13)	0.211
11-34	Romberg Sign	0.88 (0.52,1.50)	0.642
11-35	Gait	1.00 (0.83,1.22)	0.966
11-36	CNS Index	0.97 (0.84,1.12)	0.672
12-3	Psychoses	1.11 (0.89,1.39)	0.368
12-4	Alcohol Dependence	1.07 (0.90,1.28)	0.420
12-5	Drug Dependence	0.46 (0.16,1.34)	0.155
12-6	Anxiety	1.14 (1.03,1.26)	0.011
12-7	Other Neuroses	1.20 (1.09,1.32)	<0.001
12-8	SCL-90-R Anxiety	1.15 (0.99,1.34)	0.065
12-9	SCL-90-R Depression	1.15 (1.01,1.31)	0.040
12-10	SCL-90-R Hostility	1.19 (1.01,1.41)	0.045
12-11	SCL-90-R Interpersonal Sensitivity	1.12 (0.98,1.28)	0.090
12-12	SCL-90-R Obsessive-Compulsive Behavior	1.13 (1.00,1.29)	0.058
12-13	SCL-90-R Paranoid Ideation	1.21 (1.02,1.45)	0.032
12-14	SCL-90-R Phobic Anxiety	1.28 (1.11,1.48)	0.001
12-15	SCL-90-R Psychoticism	1.24 (1.08,1.42)	0.002
12-16	SCL-90-R Somatization	1.16 (1.03,1.31)	0.013
12-17	SCL-90-R Global Severity Index (GSI)	1.24 (1.09,1.41)	0.001
12-18	SCL-90-R Positive Symptom Total (PST)	1.22 (1.07,1.38)	0.003
12-19	SCL-90-R Positive Symptom Distress Index (PSDI)	1.13 (0.97,1.33)	0.130
13-3	Uncharacterized Hepatitis	0.86 (0.61,1.21)	0.377
13-4	Jaundice	0.44 (0.28,0.69)	<0.001
13-5	Chronic Liver Disease and Cirrhosis (Alcohol-related)	1.10 (0.89,1.37)	0.368
13-6	Chronic Liver Disease and Cirrhosis (Non-alcohol-related)	1.05 (0.73,1.49)	0.803
13-7	Liver Abscess and Sequelae of Chronic Liver Disease	2.30 (0.71,7.43)	0.162
13-8	Enlarged Liver (Hepatomegaly)	0.94 (0.65,1.35)	0.731

**Table G-8. Summary of Unadjusted Results for Dichotomous Variables – Model 4
(Ranch Hands: Log₂ (1987 Dioxin + 1)) (Continued)**

Table Ref.	Clinical Parameter	Est. Relative Risk (95% C.I.)	p-Value
13-9	Other Liver Disorders	1.10 (1.00,1.22)	0.055
13-10	Current Hepatomegaly	1.04 (0.69,1.58)	0.853
13-12	AST	1.26 (1.06,1.48)	0.008
13-14	ALT	1.33 (1.13,1.56)	0.001
13-16	GGT	1.17 (1.01,1.35)	0.034
13-18	Alkaline Phosphatase	0.79 (0.58,1.09)	0.144
13-20	Total Bilirubin	0.89 (0.72,1.10)	0.275
13-21	Direct Bilirubin	0.78 (0.18,3.33)	0.735
13-23	Lactic Dehydrogenase	1.00 (0.85,1.17)	0.989
13-25	Cholesterol	1.15 (1.02,1.30)	0.025
13-27	HDL Cholesterol	0.92 (0.78,1.09)	0.349
13-29	Cholesterol-HDL Ratio	1.22 (1.11,1.34)	<0.001
13-31	Triglycerides	1.29 (1.16,1.44)	<0.001
13-33	Creatine Phosphokinase	1.14 (0.97,1.33)	0.123
13-35	Serum Amylase	0.93 (0.70,1.22)	0.590
13-36	Antibodies for Hepatitis A	1.08 (0.98,1.19)	0.125
13-37	Evidence of Prior Hepatitis B	1.20 (1.03,1.40)	0.023
13-38	Current Hepatitis B	1.37 (0.41,4.55)	0.617
13-39	Antibodies for Hepatitis C	0.69 (0.42,1.14)	0.139
13-40	Stool Hemoccult	1.04 (0.81,1.34)	0.760
13-42	Prealbumin	1.02 (0.69,1.49)	0.931
13-44	Albumin	0.68 (0.24,1.96)	0.465
13-46	α-1-Acid Glycoprotein	1.00 (0.80,1.25)	0.986
13-50	α-2-Macroglobulin	1.37 (1.06,1.77)	0.020
13-52	Apolipoprotein B	1.12 (1.02,1.23)	0.017
13-54	C3 Complement	0.61 (0.41,0.91)	0.011
13-56	C4 Complement	0.32 (0.12,0.90)	0.033
13-58	Haptoglobin	1.03 (0.94,1.14)	0.509
13-60	Transferrin	1.03 (0.88,1.22)	0.710
14-3	Essential Hypertension	1.22 (1.11,1.34)	<0.001
14-4	Heart Disease (Excluding Essential Hypertension)	0.87 (0.79,0.96)	0.004
14-5	Myocardial Infarction	1.03 (0.87,1.21)	0.740
14-6	Stroke or Transient Ischemia Attack	0.99 (0.66,1.48)	0.957
14-8	Systolic Blood Pressure	1.00 (0.89,1.12)	0.956
14-10	Diastolic Blood Pressure	1.14 (0.94,1.39)	0.198
14-11	Heart Sounds	1.16 (0.92,1.46)	0.220
14-12	Overall Electrocardiograph	0.96 (0.87,1.06)	0.391
14-13	Right Bundle Branch Block	1.03 (0.77,1.38)	0.845
14-14	Left Bundle Branch Block	0.69 (0.35,1.36)	0.271
14-15	Non-Specific ST- and T-Wave Changes	1.06 (0.94,1.19)	0.361
14-16	Bradycardia	0.77 (0.56,1.05)	0.084
14-17	Tachycardia	1.56 (0.92,2.63)	0.111
14-18	Arrhythmia	0.99 (0.82,1.20)	0.932
14-19	Evidence of Prior Myocardial Infarction	1.09 (0.87,1.38)	0.447
14-20	ECG: Other Diagnoses	1.27 (0.63,2.59)	0.512
14-21	Funduscopic Examination	1.00 (0.87,1.15)	0.951
14-22	Carotid Bruits	1.02 (0.77,1.36)	0.897
14-23	Radial Pulses	0.75 (0.43,1.32)	0.305
14-24	Femoral Pulses	1.01 (0.75,1.38)	0.927

**Table G-8. Summary of Unadjusted Results for Dichotomous Variables – Model 4
(Ranch Hands: Log₂ (1987 Dioxin + 1)) (Continued)**

Table Ref.	Clinical Parameter	Est. Relative Risk (95% C.I.)	p-Value
14-25	Popliteal Pulses	0.98 (0.74,1.30)	0.891
14-26	Dorsalis Pedis Pulses	0.99 (0.84,1.17)	0.913
14-27	Posterior Tibial Pulses	1.03 (0.86,1.24)	0.746
14-28	Leg Pulses	1.00 (0.87,1.16)	0.956
14-29	Peripheral Pulses	1.00 (0.86,1.15)	0.972
14-30	ICVI Index	1.08 (0.86,1.37)	0.503
15-14	Prothrombin Time	0.86 (0.55,1.34)	0.498
15-15	RBC Morphology	1.03 (0.87,1.23)	0.698
15-18	Absolute Neutrophils (bands) (Zero vs. Nonzero)	0.99 (0.88,1.12)	0.905
15-22	Absolute Eosinophils (Zero vs. Nonzero)	1.05 (0.91,1.20)	0.528
15-24	Absolute Basophils (Zero vs. Nonzero)	0.97 (0.88,1.06)	0.496
16-3	Past Thyroid Disease	1.01 (0.85,1.20)	0.892
16-4	Composite Diabetes Indicator	1.35 (1.20,1.52)	<0.001
16-7	Thyroid Gland	0.85 (0.47,1.51)	0.562
16-8	Testicular Examination	1.01 (0.81,1.26)	0.903
16-12	Thyroxine	0.97 (0.73,1.29)	0.825
16-13	Anti-Thyroid Antibodies	0.82 (0.43,1.55)	0.535
16-15	Fasting Glucose	1.25 (1.11,1.41)	<0.001
16-17	2-Hour Postprandial Glucose	1.06 (0.92,1.22)	0.394
16-18	Fasting Urinary Glucose	1.38 (1.12,1.71)	0.004
16-19	2-Hour Postprandial Urinary Glucose	0.97 (0.86,1.10)	0.664
16-23	α -1-C Hemoglobin	1.39 (1.21,1.60)	<0.001
16-25	Total Testosterone	1.22 (1.05,1.43)	0.013
16-27	Free Testosterone	0.94 (0.65,1.36)	0.744
16-29	Estradiol	1.04 (0.94,1.15)	0.430
16-31	LH	0.84 (0.68,1.04)	0.094
16-33	FSH	0.97 (0.82,1.15)	0.712
17-14	ANA Test	0.98 (0.90,1.08)	0.732
17-15	ANA Thyroid Microsomal Antibody	0.90 (0.68,1.20)	0.486
17-16	MSK Smooth Muscle Antibody	0.88 (0.76,1.02)	0.087
17-17	MSK Mitochondrial Antibody	0.62 (0.29,1.33)	0.206
17-18	MSK Parietal Antibody	1.14 (0.92,1.42)	0.245
17-19	Rheumatoid Factor	0.81 (0.69,0.96)	0.010
18-3	Asthma	1.06 (0.86,1.31)	0.594
18-4	Bronchitis	0.97 (0.87,1.08)	0.579
18-5	Pneumonia	0.91 (0.78,1.07)	0.236
18-6	Thorax and Lung Abnormalities	1.03 (0.90,1.19)	0.653
18-7	X-ray Interpretation	0.83 (0.71,0.97)	0.015

Note: Relative risk for a twofold increase in 1987 dioxin.

Table G-9. Summary of Unadjusted Results for Polytomous Variables – Model 1 (Ranch Hands vs. Comparisons)

Table Ref.	Clinical Parameter	Contrast	Occupational Category	Number (%) Abnormal		Est. Relative Risk (95% C.I.)	p-Value
				RH	C		
11-28	Polyneuropathy Severity Index	Moderate vs. None or Mild	All	21 (2.6)	13 (1.1)	2.37 (1.18,4.76)	0.015
			Officer	7 (2.2)	6 (1.3)	1.73 (0.58,5.19)	0.330
			Enlisted Flyer	7 (4.8)	2 (1.1)	4.54 (0.93,22.20)	0.062
			Enlisted Groundcrew	7 (2.0)	5 (0.9)	2.13 (0.67,6.77)	0.199
		Severe vs. None or Mild	All	4 (0.5)	1 (0.1)	5.87 (0.65,52.61)	0.114
			Officer	3 (0.9)	0 (0.0)	--	0.130 ^a
			Enlisted Flyer	0 (0.0)	0 (0.0)	--	--
			Enlisted Groundcrew	1 (0.3)	1 (0.2)	1.52 (0.09,24.45)	0.766
			All	11 (1.3)	18 (1.5)	0.88 (0.41,1.87)	0.737
13-48	α -1-Antitrypsin	Low vs. Normal	Officer	8 (2.4)	11 (2.2)	1.06 (0.42,2.65)	0.908
			Enlisted Flyer	1 (0.7)	1 (0.5)	1.23 (0.08,19.83)	0.884
			Enlisted Groundcrew	2 (0.5)	6 (1.1)	0.50 (0.10,2.51)	0.403
		High vs. Normal	All	8 (0.9)	5 (0.4)	2.30 (0.75,7.06)	0.145
			Officer	2 (0.6)	0 (0.0)	--	0.327 ^a
			Enlisted Flyer	1 (0.7)	2 (1.1)	0.61 (0.07,5.25)	0.657
			Enlisted Groundcrew	5 (1.4)	3 (0.5)	2.52 (0.61,10.42)	0.202
			All	42 (4.9)	60 (4.8)	1.01 (0.67,1.51)	0.979
			Officer	19 (5.6)	28 (5.7)	0.97 (0.53,1.77)	0.921
15-4	RBC Count	Low vs. Normal	Enlisted Flyer	11 (7.3)	7 (3.7)	2.03 (0.77,5.36)	0.155
			Enlisted Groundcrew	12 (3.2)	25 (4.4)	0.72 (0.36,1.45)	0.357
		High vs. Normal	All	6 (0.7)	14 (1.1)	0.62 (0.24,1.61)	0.322
			Officer	1 (0.3)	6 (1.2)	0.24 (0.03,1.98)	0.185
			Enlisted Flyer	2 (1.3)	2 (1.1)	1.29 (0.18,9.27)	0.800
			Enlisted Groundcrew	3 (0.8)	6 (1.1)	0.75 (0.19,3.02)	0.685

Table G-9. Summary of Unadjusted Results for Polytomous Variables – Model 1 (Ranch Hands vs. Comparisons) (Continued)

Table Ref.	Clinical Parameter	Contrast	Occupational Category	Number (%) Abnormal		Est. Relative Risk (95% C.I.)	p-Value
				RH	C		
15-6	WBC Count	Low vs. Normal	All	51 (5.9)	62 (5.0)	1.20 (0.82,1.75)	0.353
			Officer	22 (6.5)	29 (5.9)	1.10 (0.62,1.95)	0.747
			Enlisted Flyer	10 (6.6)	6 (3.2)	2.14 (0.76,6.05)	0.150
			Enlisted Groundcrew	19 (5.1)	27 (4.8)	1.08 (0.59,1.97)	0.809
	Hemoglobin	High vs. Normal	All	31 (3.6)	45 (3.6)	1.00 (0.63,1.60)	0.988
			Officer	7 (2.1)	12 (2.4)	0.85 (0.33,2.17)	0.727
			Enlisted Flyer	8 (5.3)	10 (5.4)	1.03 (0.40,2.68)	0.954
			Enlisted Groundcrew	16 (4.3)	23 (4.0)	1.07 (0.55,2.05)	0.850
15-8	Hemoglobin	Low vs. Normal	All	62 (7.2)	79 (6.3)	1.14 (0.81,1.61)	0.458
			Officer	25 (7.3)	29 (5.9)	1.27 (0.73,2.21)	0.400
			Enlisted Flyer	16 (10.6)	13 (7.0)	1.60 (0.74,3.44)	0.230
			Enlisted Groundcrew	21 (5.6)	37 (6.5)	0.85 (0.49,1.47)	0.557
	Hematocrit	High vs. Normal	All	3 (0.4)	7 (0.6)	0.62 (0.16,2.41)	0.493
			Officer	2 (0.6)	2 (0.4)	1.47 (0.21,10.49)	0.700
			Enlisted Flyer	1 (0.7)	0 (0.0)	--	0.899 ^a
			Enlisted Groundcrew	0 (0.0)	5 (0.9)	--	0.171 ^a
15-10	Hematocrit	Low vs. Normal	All	21 (2.4)	29 (2.3)	1.04 (0.59,1.84)	0.886
			Officer	8 (2.4)	12 (2.4)	0.96 (0.39,2.37)	0.928
			Enlisted Flyer	6 (4.0)	4 (2.1)	1.91 (0.53,6.88)	0.325
			Enlisted Groundcrew	7 (1.9)	13 (2.3)	0.81 (0.32,2.05)	0.659
	Hematocrit	High vs. Normal	All	1 (0.1)	5 (0.4)	0.29 (0.03,2.47)	0.256
			Officer	0 (0.0)	2 (0.4)	--	0.647 ^a
			Enlisted Flyer	1 (0.7)	0 (0.0)	--	0.907 ^a
			Enlisted Groundcrew	0 (0.0)	3 (0.5)	--	0.413 ^a

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Table G-9. Summary of Unadjusted Results for Polytomous Variables – Model 1 (Ranch Hands vs. Comparisons) (Continued)

Table Ref.	Clinical Parameter	Contrast	Occupational Category	Number (%) Abnormal		Est. Relative Risk (95% C.I.)	p-Value
				RH	C		
15-12	Platelet Count	Low vs. Normal	All	23 (2.7)	39 (3.1)	0.85 (0.50,1.43)	0.533
			Officer	16 (4.7)	9 (1.8)	2.65 (1.16,6.06)	0.021
			Enlisted Flyer	1 (0.7)	11 (6.0)	0.11 (0.01,0.83)	0.032
			Enlisted Groundcrew	6 (1.6)	19 (3.4)	0.47 (0.19,1.20)	0.115
	High vs. Normal	All	4 (0.5)	5 (0.4)	1.15 (0.31,4.29)	0.837	
		Officer	1 (0.3)	3 (0.6)	0.50 (0.05,4.79)	0.545	
		Enlisted Flyer	1 (0.7)	1 (0.5)	1.16 (0.07,18.72)	0.916	
		Enlisted Groundcrew	2 (0.5)	1 (0.2)	3.00 (0.27,33.23)	0.370	
16-5	Diabetic Severity	No Treatment vs. Nondiabetic	All	49 (5.7)	66 (5.4)	1.07 (0.73,1.57)	0.721
			Officer	16 (4.7)	25 (5.1)	0.94 (0.49,1.80)	0.859
			Enlisted Flyer	9 (6.1)	14 (7.6)	0.78 (0.33,1.87)	0.579
			Enlisted Groundcrew	24 (6.4)	27 (4.8)	1.34 (0.76,2.36)	0.314
	Diet Only vs. Nondiabetic	All	18 (2.1)	18 (1.5)	1.44 (0.75,2.79)	0.275	
		Officer	8 (2.4)	6 (1.2)	1.97 (0.67,5.72)	0.215	
		Enlisted Flyer	2 (1.4)	2 (1.1)	1.22 (0.17,8.76)	0.846	
		Enlisted Groundcrew	8 (2.1)	10 (1.8)	1.21 (0.47,3.09)	0.697	
	Oral Hypoglycemic vs. Nondiabetic	All	38 (4.4)	77 (6.3)	0.71 (0.48,1.06)	0.097	
		Officer	12 (3.6)	26 (5.3)	0.68 (0.34,1.37)	0.281	
		Enlisted Flyer	9 (6.1)	12 (6.5)	0.91 (0.37,2.23)	0.840	
		Enlisted Groundcrew	17 (4.5)	39 (7.0)	0.66 (0.37,1.18)	0.160	
	Requiring Insulin vs. Nondiabetic	All	24 (2.8)	17 (1.4)	2.04 (1.09,3.82)	0.026	
		Officer	12 (3.6)	7 (1.4)	2.53 (0.98,6.50)	0.054	
		Enlisted Flyer	3 (2.0)	4 (2.2)	0.91 (0.20,4.15)	0.905	
		Enlisted Groundcrew	9 (2.4)	6 (1.1)	2.26 (0.80,6.41)	0.125	

Table G-9. Summary of Unadjusted Results for Polytomous Variables – Model 1 (Ranch Hands vs. Comparisons) (Continued)

Table Ref.	Clinical Parameter	Contrast	Occupational Category	Number (%) Abnormal		Est. Relative Risk (95% C.I.)	p-Value
				RH	C		
16-10	TSH	Abnormal Low vs. Normal	All	10 (1.2)	9 (0.8)	1.61 (0.65,3.98)	0.301
			Officer	4 (1.2)	2 (0.4)	2.92 (0.53,16.01)	0.218
			Enlisted Flyer	3 (2.1)	2 (1.1)	1.89 (0.31,11.48)	0.488
			Enlisted Groundcrew	3 (0.8)	5 (0.9)	0.91 (0.22,3.84)	0.899
	TSH	Abnormal High vs. Normal	All	36 (4.3)	37 (3.1)	1.41 (0.88,2.25)	0.149
			Officer	14 (4.3)	17 (3.6)	1.20 (0.58,2.47)	0.620
			Enlisted Flyer	3 (2.1)	6 (3.3)	0.63 (0.15,2.57)	0.519
			Enlisted Groundcrew	19 (5.1)	14 (2.6)	2.06 (1.02,4.16)	0.044
16-21	Serum Insulin	Abnormal Low vs. Normal	All	86 (12.0)	138 (13.5)	0.85 (0.62,1.15)	0.278
			Officer	36 (12.6)	69 (16.5)	0.76 (0.48,1.20)	0.235
			Enlisted Flyer	15 (12.4)	14 (9.6)	1.11 (0.49,2.51)	0.803
			Enlisted Groundcrew	35 (11.4)	55 (12.0)	0.88 (0.55,1.42)	0.613
	Serum Insulin	Abnormal High vs. Normal	All	294 (41.2)	432 (42.2)	0.92 (0.75,1.13)	0.443
			Officer	112 (39.3)	151 (36.0)	1.08 (0.78,1.49)	0.655
			Enlisted Flyer	50 (41.3)	74 (50.7)	0.70 (0.42,1.17)	0.173
			Enlisted Groundcrew	132 (42.9)	207 (45.2)	0.89 (0.65,1.21)	0.442
18-11	Loss of Vital Capacity	Mild vs. None	All	67 (7.7)	98 (7.8)	0.98 (0.71,1.35)	0.885
			Officer	24 (7.0)	32 (6.5)	1.10 (0.63,1.90)	0.737
			Enlisted Flyer	11 (7.3)	18 (9.7)	0.72 (0.33,1.58)	0.413
			Enlisted Groundcrew	32 (8.5)	48 (8.4)	1.00 (0.62,1.59)	0.990
	Loss of Vital Capacity	Moderate or Severe vs. None	All	10 (1.2)	20 (1.6)	0.71 (0.33,1.53)	0.388
			Officer	5 (1.5)	5 (1.0)	1.46 (0.42,5.10)	0.549
			Enlisted Flyer	1 (0.7)	4 (2.2)	0.29 (0.03,2.67)	0.277
			Enlisted Groundcrew	4 (1.1)	11 (1.9)	0.54 (0.17,1.72)	0.300
18-12	Obstructive Abnormality	Mild vs. None	All	276 (31.8)	368 (29.5)	1.12 (0.93,1.36)	0.237
			Officer	124 (36.4)	147 (29.8)	1.38 (1.02,1.86)	0.034
			Enlisted Flyer	49 (32.5)	72 (38.7)	0.81 (0.50,1.28)	0.363
			Enlisted Groundcrew	103 (27.3)	149 (26.2)	1.03 (0.77,1.39)	0.845

Table G-9. Summary of Unadjusted Results for Polytomous Variables – Model 1 (Ranch Hands vs. Comparisons) (Continued)

Table Ref.	Clinical Parameter	Contrast	Occupational Category	Number (%) Abnormal		Est. Relative Risk (95% C.I.)	p-Value
				RH	C		
18-12	Obstructive Abnormality (continued)	Moderate vs. None	All	51 (5.9)	75 (6.0)	1.02 (0.70,1.48)	0.928
			Officer	19 (5.6)	26 (5.3)	1.20 (0.64,2.22)	0.569
			Enlisted Flyer	14 (9.3)	12 (6.5)	1.38 (0.60,3.15)	0.444
			Enlisted Groundcrew	18 (4.8)	37 (6.5)	0.72 (0.40,1.30)	0.281
		Severe vs. None	All	14 (1.6)	16 (1.3)	1.31 (0.63,2.70)	0.467
			Officer	5 (1.5)	5 (1.0)	1.64 (0.47,5.73)	0.440
			Enlisted Flyer	6 (4.0)	5 (2.7)	1.42 (0.42,4.82)	0.574
			Enlisted Groundcrew	3 (0.8)	6 (1.1)	0.75 (0.18,3.00)	0.679

^a P-value determined using a chi-square test with continuity correction because of the sparse number of participants with abnormalities.

--: Relative risk, confidence interval, and p-value not presented because of the sparse number of participants with abnormalities.

Note: RH = Ranch Hand; C = Comparison.

Table G-10. Summary of Unadjusted Results for Polytomous Variables – Model 2 (Ranch Hands: Log₂ (Initial Dioxin))

Table Ref.	Clinical Parameter	Contrast	Est. Relative Risk (95% C.I. ^a)	p-Value ^a
11-28	Polyneuropathy Severity Index	Moderate vs. None or Mild	1.29 (0.90,1.87)	0.168
		Severe vs. None or Mild	0.68 (0.23,1.98)	0.476
13-48	α -1-Antitrypsin	Low vs. Normal	0.83 (0.37,1.90)	0.667
		High vs. Normal	1.05 (0.39,2.80)	0.925
15-4	RBC Count	Low vs. Normal	0.79 (0.53,1.15)	0.220
		High vs. Normal	0.76 (0.36,1.59)	0.464
15-6	WBC Count	Low vs. Normal	0.59 (0.39,0.89)	0.012
		High vs. Normal	0.99 (0.69,1.43)	0.964
15-8	Hemoglobin	Low vs. Normal	0.74 (0.53,1.03)	0.075
		High vs. Normal	1.16 (0.24,5.60)	0.856
15-10	Hematocrit	Low vs. Normal	0.95 (0.58,1.57)	0.840
		High vs. Normal	1.17 (0.24,5.66)	0.841
15-12	Platelet Count	Low vs. Normal	0.63 (0.33,1.19)	0.152
		High vs. Normal	1.28 (0.49,3.36)	0.616
16-5	Diabetic Severity	No Treatment vs. Nondiabetic	1.14 (0.87,1.49)	0.332
		Diet Only vs. Nondiabetic	1.12 (0.74,1.71)	0.584
		Oral Hypoglycemic vs. Nondiabetic	1.13 (0.87,1.48)	0.358
		Requiring Insulin vs. Nondiabetic	1.23 (0.86,1.76)	0.250
16-10	TSH	Low vs. Normal	1.40 (0.73,2.71)	0.311
		High vs. Normal	1.27 (0.89,1.79)	0.183
16-21	Serum Insulin	Low vs. Normal	0.96 (0.70,1.32)	0.815
		High vs. Normal	1.07 (0.90,1.28)	0.447
18-11	Loss of Vital Capacity	Mild vs. None	0.88 (0.67,1.15)	0.345
		Moderate or Severe vs. None	0.73 (0.31,1.76)	0.489
18-12	Obstructive Abnormality	Mild vs. None	0.79 (0.67,0.93)	0.005
		Moderate vs. None	0.87 (0.63,1.20)	0.393
		Severe vs. None	0.53 (0.24,1.21)	0.131

^a Adjusted for percent body fat at the time of the blood measurement of dioxin.

Note: Relative risk for a twofold increase in initial dioxin.

Table G-11. Summary of Unadjusted Results for Polytomous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category)

Table Ref.	Clinical Parameter	Contrast	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
11-28	Polyneuropathy Severity Index	Moderate vs. None or Mild	Comparison	1,146	13 (1.1)		
			Background RH	361	5 (1.4)	1.30 (0.46,3.71)	0.619
			Low RH	226	7 (3.1)	2.76 (1.09,7.02)	0.032
			High RH	227	7 (3.1)	2.64 (1.03,6.73)	0.042
			Low plus High RH	453	14 (3.1)	2.70 (1.26,5.81)	0.011
		Severe vs. None or Mild	Comparison	1,146	1 (0.1)		
			Background RH	361	1 (0.3)	3.03 (0.19,49.25)	0.435
			Low RH	226	2 (0.9)	10.54 (0.95,116.83)	0.055
			High RH	227	1 (0.4)	5.41 (0.33,87.73)	0.235
			Low plus High RH	453	3 (0.7)	7.54 (0.75,75.71)	0.086
13-48	α -1-Antitrypsin	Low vs. Normal	Comparison	1,194	17 (1.4)		
			Background RH	376	7 (1.9)	1.14 (0.47,2.79)	0.772
			Low RH	236	2 (0.8)	0.61 (0.14,2.67)	0.513
			High RH	240	2 (0.8)	0.68 (0.16,2.98)	0.610
			Low plus High RH	476	4 (0.8)	0.65 (0.22,1.93)	0.434
		High vs. Normal	Comparison	1,194	5 (0.4)		
			Background RH	376	5 (1.3)	2.48 (0.70,8.77)	0.158
			Low RH	236	1 (0.4)	1.03 (0.11,9.33)	0.976
			High RH	240	2 (0.8)	3.49 (0.64,19.06)	0.149
			Low plus High RH	476	3 (0.6)	1.91 (0.42,8.72)	0.404
15-4	RBC Count	Low vs. Normal	Comparison	1,211	55 (4.5)		
			Background RH	381	19 (5.0)	1.09 (0.64,1.87)	0.757
			Low RH	239	12 (5.0)	1.11 (0.58,2.10)	0.753
			High RH	239	9 (3.8)	0.83 (0.40,1.70)	0.603
			Low plus High RH	478	21 (4.4)	0.96 (0.57,1.61)	0.868

Table G-11. Summary of Unadjusted Results for Polytomous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Ref.	Clinical Parameter	Contrast	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
15-4	RBC Count (continued)	High vs. Normal	Comparison	1,211	14 (1.2)		
			Background RH	381	1 (0.3)	0.26 (0.03,1.99)	0.195
			Low RH	239	2 (0.8)	0.69 (0.15,3.06)	0.623
			High RH	239	3 (1.3)	0.94 (0.26,3.33)	0.921
			Low plus High RH	478	5 (1.1)	0.80 (0.28,2.30)	0.683
15-6	WBC Count	Low vs. Normal	Comparison	1,211	59 (4.9)		
			Background RH	381	25 (6.6)	1.22 (0.75,1.99)	0.426
			Low RH	239	20 (8.4)	1.82 (1.07,3.10)	0.027
			High RH	239	6 (2.5)	0.56 (0.24,1.32)	0.188
			Low plus High RH	478	26 (5.4)	1.01 (0.59,1.73)	0.963
15-8	Hemoglobin	High vs. Normal	Comparison	1,211	43 (3.6)		
			Background RH	381	12 (3.2)	0.86 (0.45,1.67)	0.664
			Low RH	239	7 (2.9)	0.86 (0.38,1.94)	0.716
			High RH	239	11 (4.6)	1.32 (0.67,2.61)	0.420
			Low plus High RH	478	18 (3.8)	1.07 (0.60,1.89)	0.825
		Low vs. Normal	Comparison	1,211	74 (6.1)		
			Background RH	381	30 (7.9)	1.35 (0.86,2.10)	0.188
			Low RH	239	16 (6.7)	1.09 (0.62,1.90)	0.767
			High RH	239	13 (5.4)	0.86 (0.47,1.58)	0.630
			Low plus High RH	478	29 (6.1)	0.97 (0.62,1.51)	0.887
		High vs. Normal	Comparison	1,211	7 (0.6)		
			Background RH	381	2 (0.5)	1.04 (0.21,5.12)	0.958
			Low RH	239	0 (0.0)	--	0.507 ^b
			High RH	239	1 (0.4)	0.64 (0.08,5.28)	0.677
			Low plus High RH	478	1 (0.2)	--	0.547 ^b

Table G-11. Summary of Unadjusted Results for Polytomous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Ref.	Clinical Parameter	Contrast	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
15-10	Hematocrit	Low vs. Normal	Comparison	1,211	27 (2.2)		
			Background RH	381	8 (2.1)	0.97 (0.43,2.16)	0.933
			Low RH	239	5 (2.1)	0.93 (0.35,2.43)	0.875
			High RH	239	5 (2.1)	0.91 (0.35,2.40)	0.850
			Low plus High RH	478	10 (2.1)	0.92 (0.44,1.92)	0.820
	High vs. Normal		Comparison	1,211	5 (0.4)		
			Background RH	381	0 (0.0)	--	0.464 ^b
			Low RH	239	0 (0.0)	--	0.695 ^b
			High RH	239	1 (0.4)	0.91 (0.10,7.96)	0.931
			Low plus High RH	478	1 (0.2)	--	0.856 ^b
15-12	Platelet Count	Low vs. Normal	Comparison	1,205	35 (2.9)		
			Background RH	379	14 (3.7)	1.40 (0.74,2.66)	0.299
			Low RH	238	6 (2.5)	0.84 (0.35,2.03)	0.702
			High RH	238	2 (0.8)	0.26 (0.06,1.10)	0.067
			Low plus High RH	476	8 (1.7)	0.47 (0.20,1.13)	0.090
	High vs. Normal		Comparison	1,205	5 (0.4)		
			Background RH	379	2 (0.5)	1.02 (0.19,5.30)	0.984
			Low RH	238	0 (0.0)	--	0.693 ^b
			High RH	238	2 (0.8)	2.61 (0.49,13.84)	0.261
			Low plus High RH	476	2 (0.4)	--	0.999 ^b

Table G-11. Summary of Unadjusted Results for Polytomous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Ref.	Table Clinical Parameter	Contrast	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
Q S	16-5 Diabetic Severity	No Treatment vs. Nondiabetic	Comparison Background RH Low RH High RH Low plus High RH	1,195 379 235 240 475	63 (5.3) 16 (4.2) 13 (5.5) 19 (7.9) 32 (6.7)	0.91 (0.51,1.61) 1.04 (0.55,1.94) 1.43 (0.83,2.47) 1.22 (0.77,1.92)	0.749 0.912 0.202 0.394
		Diet Only vs. Nondiabetic	Comparison Background RH Low RH High RH Low plus High RH	1,195 379 235 240 475	17 (1.4) 6 (1.6) 5 (2.1) 7 (2.9) 12 (2.5)	1.23 (0.48,3.17) 1.49 (0.54,4.11) 2.00 (0.81,4.92) 1.73 (0.81,3.70)	0.668 0.437 0.131 0.156
		Oral Hypoglycemic vs. Nondiabetic	Comparison Background RH Low RH High RH Low plus High RH	1,195 379 235 240 475	72 (6.0) 5 (1.3) 14 (6.0) 18 (7.5) 32 (6.7)	0.27 (0.11,0.69) 0.92 (0.49,1.72) 1.08 (0.61,1.91) 1.00 (0.63,1.58)	0.006 0.795 0.799 0.988
		Requiring Insulin vs. Nondiabetic	Comparison Background RH Low RH High RH Low plus High RH	1,195 379 235 240 475	17(1.4) 8 (2.1) 8 (3.4) 8 (3.3) 16 (3.4)	1.55 (0.66,3.63) 2.43 (1.03,5.72) 2.40 (1.02,5.65) 2.41 (1.20,4.83)	0.318 0.042 0.046 0.013

Table G-11. Summary of Unadjusted Results for Polytomous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Ref.	Clinical Parameter	Contrast	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
16-10	TSH	Low vs. Normal	Comparison	1,161	9 (0.8)		
			Background RH	367	6 (1.6)	2.27 (0.80,6.50)	0.125
			Low RH	233	1 (0.4)	0.54 (0.07,4.31)	0.564
			High RH	234	3 (1.3)	1.60 (0.43,6.02)	0.485
			Low plus High RH	467	4 (0.9)	0.93 (0.25,3.48)	0.919
		High vs. Normal	Comparison	1,161	36 (3.1)		
			Background RH	367	17 (4.6)	1.46 (0.80,2.64)	0.214
			Low RH	233	7 (3.0)	0.97 (0.43,2.22)	0.951
			High RH	234	10 (4.3)	1.47 (0.72,3.02)	0.294
			Low plus High RH	467	17 (3.6)	1.20 (0.66,2.17)	0.553
16-21	Serum Insulin	Low vs. Normal	Comparison	996	131 (13.2)		
			Background RH	342	51 (14.9)	0.96 (0.66,1.39)	0.820
			Low RH	186	20 (10.8)	0.84 (0.50,1.43)	0.527
			High RH	183	13 (7.1)	0.58 (0.31,1.07)	0.082
			Low plus High RH	369	33 (8.9)	0.70 (0.45,1.07)	0.102
		High vs. Normal	Comparison	996	418 (42.0)		
			Background RH	342	122 (35.7)	0.91 (0.69,1.20)	0.507
			Low RH	186	85 (45.7)	1.14 (0.81,1.61)	0.460
			High RH	183	87 (47.5)	0.99 (0.70,1.40)	0.968
			Low plus High RH	369	172 (46.6)	1.06 (0.82,1.39)	0.643

Table G-11. Summary of Unadjusted Results for Polytomous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter	Contrast	Dioxin Category	n	Number (%) Abnormal	Est. Relative Risk (95% C.I.) ^a	p-Value ^a
18-11	Loss of Vital Capacity	Mild vs. None	Comparison	1,211	97 (8.0)		
			Background RH	381	31 (8.1)	1.18 (0.77,1.81)	0.456
			Low RH	238	18 (7.6)	0.89 (0.52,1.51)	0.663
			High RH	243	17 (7.0)	0.75 (0.43,1.29)	0.295
			Low plus High RH	481	35 (7.3)	0.81 (0.54,1.23)	0.325
		Moderate or Severe vs. None	Comparison	1,211	18 (1.5)		
			Background RH	381	6 (1.6)	1.27 (0.50,3.27)	0.616
			Low RH	238	2 (0.8)	0.52 (0.12,2.28)	0.387
			High RH	243	2 (0.8)	0.46 (0.10,2.00)	0.297
			Low plus High RH	481	4 (0.8)	0.49 (0.16,1.46)	0.199
18-12	Obstructive Abnormality	Mild vs. None	Comparison	1,211	356 (29.4)		
			Background RH	381	131 (34.4)	1.26 (0.98,1.62)	0.071
			Low RH	238	85 (35.7)	1.38 (1.02,1.86)	0.037
			High RH	243	55 (22.6)	0.70 (0.50,0.97)	0.031
			Low plus High RH	481	140 (29.1)	0.98 (0.77,1.24)	0.838
		Moderate vs. None	Comparison	1,211	73 (6.0)		
			Background RH	381	25 (6.6)	1.14 (0.70,1.85)	0.595
			Low RH	238	13 (5.5)	1.03 (0.56,1.92)	0.915
			High RH	243	13 (5.3)	0.82 (0.44,1.52)	0.533
			Low plus High RH	481	26 (5.4)	0.92 (0.58,1.47)	0.731
		Severe vs. None	Comparison	1,211	15 (1.2)		
			Background RH	381	7 (1.8)	1.42 (0.57,3.55)	0.453
			Low RH	238	6 (2.5)	2.37 (0.90,6.24)	0.080
			High RH	243	1 (0.4)	0.33 (0.04,2.56)	0.291
			Low plus High RH	481	7 (1.5)	0.88 (0.27,2.90)	0.835

^a Adjusted for percent body fat at the time of the blood measurement of dioxin.

^b P-value determined using a chi-square test with continuity correction because of the sparse number of participants with abnormalities.

--: Relative risk, confidence interval, and p-value are not presented because of the sparse number of participants with abnormalities.

Table G-11. Summary of Unadjusted Results for Polytomous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Note: Relative risk and confidence interval relative to Comparisons.

RH = Ranch Hand.

Comparison: 1987 Dioxin \leq 10 ppt.

Background: (Ranch Hand): 1987 Dioxin \leq 10 ppt.

Low (Ranch Hand): 1987 Dioxin > 10 ppt, 10 ppt < Initial Dioxin \leq 94 ppt.

High (Ranch Hand): 1987 Dioxin > 10 ppt, Initial Dioxin > 94 ppt.

Table G-12. Summary of Unadjusted Results for Polytomous Variables – Model 4 (Ranch Hands: Log₂ (1987 Dioxin + 1))

Table Ref.	Clinical Parameter	Contrast	Est. Relative Risk (95% C.I.)	p-Value
11-28	Polyneuropathy Severity Index	Moderate vs. None or Mild	1.38 (1.04,1.84)	0.024
		Severe vs. None or Mild	1.13 (0.59,2.15)	0.717
13-48	α -1-Antitrypsin	Low vs. Normal	0.76 (0.49,1.19)	0.229
		High vs. Normal	0.80 (0.48,1.33)	0.393
15-4	RBC Count	Low vs. Normal	0.91 (0.73,1.14)	0.405
		High vs. Normal	1.16 (0.69,1.95)	0.566
15-6	WBC Count	Low vs. Normal	0.78 (0.63,0.96)	0.020
		High vs. Normal	0.99 (0.77,1.27)	0.957
15-8	Hemoglobin	Low vs. Normal	0.82 (0.68,1.00)	0.049
		High vs. Normal	0.47 (0.20,1.14)	0.096
15-10	Hematocrit	Low vs. Normal	0.91 (0.65,1.26)	0.568
		High vs. Normal	1.41 (0.43,4.63)	0.573
15-12	Platelet Count	Low vs. Normal	0.70 (0.50,0.96)	0.028
		High vs. Normal	0.95 (0.48,1.88)	0.879
16-5	Diabetic Severity	No Treatment vs. Nondiabetic	1.28 (1.06,1.55)	0.010
		Diet Only vs. Nondiabetic	1.27 (0.94,1.72)	0.120
		Oral Hypoglycemic vs. Nondiabetic	1.58 (1.28,1.94)	<0.001
		Requiring Insulin vs. Nondiabetic	1.15 (0.87,1.50)	0.323
16-10	TSH	Low vs. Normal	0.97 (0.63,1.48)	0.881
		High vs. Normal	0.98 (0.78,1.24)	0.894
16-21	Serum Insulin	Low vs. Normal	0.83 (0.69,1.00)	0.050
		High vs. Normal	1.16 (1.04,1.30)	0.008
18-11	Loss of Vital Capacity	Mild vs. None	0.94 (0.79,1.12)	0.480
		Moderate or Severe vs. None	0.83 (0.53,1.31)	0.430
18-12	Obstructive Abnormality	Mild vs. None	0.83 (0.75,0.92)	<0.001
		Moderate vs. None	0.86 (0.70,1.05)	0.145
		Severe vs. None	0.70 (0.47,1.04)	0.078

Note: Relative risk for a twofold increase in 1987 dioxin.

Table G-13. Summary of Adjusted Results for Continuous Variables – Model 1 (Ranch Hands vs. Comparisons)

Table Ref.	Clinical Parameter (Units)	Occupational Category	Adj. Mean		Difference of Adj. Means (95% C.L.)	p-Value
			RH	C		
9-6	Body Fat (percent) ^a	All	22.13	22.29	-0.17 --	0.481
		Officer	21.96	21.81	0.16 --	0.674
		Enlisted Flyer	21.84	22.43	-0.59 --	0.319
		Enlisted Groundcrew	22.45	22.76	-0.31 --	0.394
9-8	Erythrocyte Sedimentation Rate (mm/hr) ^b	All	5.12	5.08	0.04 --	0.850
		Officer	4.30	4.38	-0.08 --	0.789
		Enlisted Flyer	5.13	5.74	-0.60 --	0.286
		Enlisted Groundcrew	5.81	5.39	0.42 --	0.236
10-35	PSA (ng/ml) ^a	All	1.202	1.199	0.003 --	0.946
		Officer	1.157	1.194	-0.037 --	0.590
		Enlisted Flyer	1.289	1.249	0.040 --	0.719
		Enlisted Groundcrew	1.177	1.149	0.028 --	0.668
13-11	AST (U/l) ^a	All	23.36	23.17	0.18 --	0.597
		Officer	23.88	23.80	0.08 --	0.885
		Enlisted Flyer	22.79	22.87	-0.09 --	0.916
		Enlisted Groundcrew	23.32	22.95	0.37 --	0.470
13-13	ALT (U/l) ^a	All	42.29	42.09	0.20 --	0.707
		Officer	42.75	42.14	0.61 --	0.460
		Enlisted Flyer	41.72	42.84	-1.12 --	0.386
		Enlisted Groundcrew	41.96	41.66	0.30 --	0.698
13-15	GGT (U/l) ^a	All	46.80	45.47	1.33 --	0.223
		Officer	45.24	43.62	1.62 --	0.331
		Enlisted Flyer	48.28	47.66	0.62 --	0.826
		Enlisted Groundcrew	46.67	45.39	1.28 --	0.439
13-17	Alkaline Phosphatase (U/l) ^a	All	82.77	80.46	2.32 --	0.016
		Officer	78.68	76.88	1.80 --	0.215
		Enlisted Flyer	84.06	83.47	0.58 --	0.811
		Enlisted Groundcrew	85.11	81.68	3.43 --	0.021
13-19	Total Bilirubin (mg/dl) ^a	All	0.511	0.511	-0.000 --	0.963
		Officer	0.528	0.528	0.000 --	0.993
		Enlisted Flyer	0.487	0.505	-0.018 --	0.482
		Enlisted Groundcrew	0.512	0.507	0.006 --	0.727
13-22	Lactic Dehydrogenase (U/l) ^a	All	155.3	155.0	0.3 --	0.790
		Officer	154.8	155.3	-0.6 --	0.768
		Enlisted Flyer	153.1	153.9	-0.8 --	0.787
		Enlisted Groundcrew	157.8	156.3	1.5 --	0.397
13-24	Cholesterol (mg/dl) ^c	All	212.3	212.6	-0.3 --	0.850
		Officer	206.6	210.4	-3.8 --	0.141
		Enlisted Flyer	215.3	216.4	-1.2 --	0.781
		Enlisted Groundcrew	214.6	211.4	3.2 --	0.197

**Table G-13. Summary of Adjusted Results for Continuous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter (Units)	Occupational Category	Adj. Mean		Difference of Adj. Means (95% C.I.)	p-Value
			RH	C		
13-26	HDL Cholesterol (mg/dl) ^a	All	47.08	46.81	0.28 --	0.600
		Officer	48.76	48.86	-0.10 --	0.907
		Enlisted Flyer	47.56	45.28	2.29 --	0.078
		Enlisted Groundcrew	45.68	45.81	-0.13 --	0.866
13-28	Cholesterol-HDL Ratio ^a	All	4.48	4.51	-0.03 --	0.546
		Officer	4.21	4.27	-0.06 --	0.446
		Enlisted Flyer	4.49	4.76	-0.27 --	0.051
		Enlisted Groundcrew	4.67	4.58	0.08 --	0.316
13-30	Triglycerides (mg/dl) ^a	All	107.4	105.6	1.8 --	0.546
		Officer	100.3	97.1	3.2 --	0.458
		Enlisted Flyer	107.0	119.5	-12.4 --	0.109
		Enlisted Groundcrew	110.5	105.2	5.3 --	0.239
13-32	Creatine Phosphokinase (U/l) ^a	All	140.3	139.4	0.9 --	0.809
		Officer	147.7	145.3	2.4 --	0.696
		Enlisted Flyer	131.5	136.4	-4.9 --	0.568
		Enlisted Groundcrew	140.2	138.3	1.8 --	0.736
13-34	Serum Amylase (U/l) ^a	All	63.65	63.74	-0.09 --	0.929
		Officer	61.86	65.36	-3.50 --	0.037
		Enlisted Flyer	65.17	62.44	2.73 --	0.301
		Enlisted Groundcrew	64.84	62.86	1.98 --	0.218
13-41	Prealbumin (mg/dl)	All	29.66	29.70	-0.04 (-0.47,0.39)	0.861
		Officer	30.03	30.20	-0.17 (-0.86,0.51)	0.621
		Enlisted Flyer	30.03	29.55	0.48 (-0.59,1.55)	0.382
		Enlisted Groundcrew	29.10	29.21	-0.11 (-0.76,0.54)	0.746
13-43	Albumin (mg/dl)	All	4,180.8	4,183.8	-3.0 (-32.1,26.0)	0.837
		Officer	4,163.1	4,192.1	-28.9 (-74.9,17.1)	0.218
		Enlisted Flyer	4,201.9	4,164.9	37.0 (-35.0,109.0)	0.314
		Enlisted Groundcrew	4,190.5	4,184.7	5.8 (-38.1,49.6)	0.797
13-45	α -1-Acid Glycoprotein (mg/dl) ^a	All	83.11	82.51	0.60 --	0.464
		Officer	78.64	80.08	-1.43 --	0.248
		Enlisted Flyer	83.83	83.68	0.15 --	0.942
		Enlisted Groundcrew	86.86	84.10	2.76 --	0.030
13-47	α -1-Antitrypsin (mg/dl) ^c	All	146.7	143.1	3.6 --	0.001
		Officer	138.6	137.9	0.7 --	0.693
		Enlisted Flyer	150.5	145.9	4.7 --	0.086
		Enlisted Groundcrew	151.5	145.6	5.9 --	<0.001
13-49	α -2-Macroglobulin (mg/dl) ^a	All	161.9	162.8	-0.9 --	0.610
		Officer	154.5	155.7	-1.2 --	0.643
		Enlisted Flyer	163.8	165.7	-1.9 --	0.664
		Enlisted Groundcrew	167.4	167.6	-0.2 --	0.951
13-51	Apolipoprotein B (mg/dl) ^c	All	110.6	111.8	-1.2 --	0.275
		Officer	105.9	109.2	-3.3 --	0.048
		Enlisted Flyer	112.9	115.1	-2.2 --	0.413
		Enlisted Groundcrew	112.6	111.4	1.2 --	0.457

**Table G-13. Summary of Adjusted Results for Continuous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter (Units)	Occupational Category	Adj. Mean		Difference of Adj. Means (95% C.I.)	p-Value
			RH	C		
13-53	C3 Complement (mg/dl) ^a	All	120.2	120.0	0.2 --	0.837
		Officer	116.5	116.1	0.4 --	0.765
		Enlisted Flyer	120.8	122.2	-1.4 --	0.505
		Enlisted Groundcrew	122.8	122.3	0.6 --	0.668
13-55	C4 Complement (mg/dl) ^a	All	26.98	27.21	-0.23 --	0.333
		Officer	26.02	26.91	-0.90 --	0.017
		Enlisted Flyer	27.74	26.77	0.98 --	0.104
		Enlisted Groundcrew	27.61	27.67	-0.06 --	0.876
13-57	Haptoglobin (mg/dl) ^c	All	128.5	120.5	8.0 --	0.003
		Officer	112.2	106.8	5.4 --	0.172
		Enlisted Flyer	137.3	127.8	9.5 --	0.160
		Enlisted Groundcrew	137.4	127.4	9.9 --	0.016
13-59	Transferrin (mg/dl) ^a	All	246.2	243.1	3.1 --	0.037
		Officer	243.5	241.6	1.9 --	0.412
		Enlisted Flyer	247.9	244.8	3.1 --	0.404
		Enlisted Groundcrew	247.1	242.9	4.2 --	0.063
14-7	Systolic Blood Pressure (mm Hg) ^a	All	127.7	128.4	-0.6 --	0.415
		Officer	127.2	128.1	-0.9 --	0.468
		Enlisted Flyer	128.7	128.6	0.1 --	0.967
		Enlisted Groundcrew	127.5	128.2	-0.7 --	0.574
14-9	Diastolic Blood Pressure (mm Hg) ^c	All	75.68	75.62	0.06 --	0.889
		Officer	75.29	75.37	-0.08 --	0.907
		Enlisted Flyer	76.47	76.13	0.33 --	0.752
		Enlisted Groundcrew	75.37	75.29	0.08 --	0.898
15-3	RBC Count (million/mm ³)	All	4.95	4.96	-0.02 (-0.05,0.02)	0.311
		Officer	4.91	4.94	-0.03 (-0.08,0.02)	0.268
		Enlisted Flyer	4.94	4.98	-0.04 (-0.12,0.04)	0.343
		Enlisted Groundcrew	4.98	4.97	0.00 (-0.05,0.05)	0.919
15-5	WBC Count (thousand/mm ³) ^a	All	6.26	6.26	0.00 --	0.974
		Officer	6.03	6.03	0.00 --	0.972
		Enlisted Flyer	6.17	6.31	-0.14 --	0.377
		Enlisted Groundcrew	6.55	6.50	0.05 --	0.648
15-7	Hemoglobin (gm/dl)	All	15.05	15.05	-0.10 (-0.09,0.08)	0.883
		Officer	15.03	15.07	-0.05 (-0.18,0.09)	0.489
		Enlisted Flyer	15.02	15.10	-0.09 (-0.29,0.12)	0.422
		Enlisted Groundcrew	15.07	15.01	0.06 (-0.07,0.19)	0.356
15-9	Hematocrit (percent)	All	44.99	45.05	-0.06 (-0.32,0.21)	0.681
		Officer	44.90	45.11	-0.21 (-0.63,0.21)	0.326
		Enlisted Flyer	44.92	45.16	-0.24 (-0.88,0.41)	0.477
		Enlisted Groundcrew	45.08	44.93	0.15 (-0.25,0.55)	0.457
15-11	Platelet Count (thousand/mm ³) ^c	All	205.8	203.0	2.9 --	0.172
		Officer	199.1	207.3	-8.2 --	0.014
		Enlisted Flyer	213.3	197.7	15.6 --	0.003
		Enlisted Groundcrew	208.9	200.8	8.1 --	0.011

**Table G-13. Summary of Adjusted Results for Continuous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter (Units)	Occupational Category	Adj. Mean		Difference of Adj. Means (95% C.I.)	p-Value
			RH	C		
15-13	Prothrombin Time (seconds) ^a	All	10.49	10.50	-0.01 --	0.873
		Officer	10.52	10.50	0.02 --	0.765
		Enlisted Flyer	10.45	10.48	-0.03 --	0.718
		Enlisted Groundcrew	10.50	10.51	-0.02 --	0.762
15-16	Absolute Neutrophils (segs) (thousand/mm ³) ^a	All	3.46	3.45	0.01 --	0.774
		Officer	3.26	3.28	-0.02 --	0.808
		Enlisted Flyer	3.44	3.47	-0.03 --	0.804
		Enlisted Groundcrew	3.68	3.61	0.06 --	0.416
15-17	Absolute Neutrophils (bands) (Nonzero Measurements) (thousand/mm ³) ^a	All	0.159	0.150	0.009 --	0.126
		Officer	0.152	0.141	0.011 --	0.221
		Enlisted Flyer	0.143	0.156	-0.013 --	0.389
		Enlisted Groundcrew	0.177	0.161	0.016 --	0.099
15-19	Absolute Lymphocytes (thousand/mm ³) ^a	All	1.79	1.79	0.00 --	0.964
		Officer	1.80	1.75	0.05 --	0.259
		Enlisted Flyer	1.74	1.82	-0.08 --	0.236
		Enlisted Groundcrew	1.82	1.83	-0.01 --	0.781
15-20	Absolute Monocytes (thousands/mm ³) ^c	All	0.471	0.476	-0.006 --	0.544
		Officer	0.461	0.468	-0.007 --	0.620
		Enlisted Flyer	0.452	0.490	-0.037 --	0.106
		Enlisted Groundcrew	0.489	0.481	0.008 --	0.590
15-21	Absolute Eosinophils (Nonzero Measurements) (thousand/mm ³) ^a	All	0.151	0.154	-0.003 --	0.576
		Officer	0.154	0.147	0.007 --	0.347
		Enlisted Flyer	0.150	0.153	-0.003 --	0.806
		Enlisted Groundcrew	0.149	0.162	-0.013 --	0.106
15-23	Absolute Basophils (Nonzero Measurements) (thousand/mm ³) ^a	All	0.072	0.074	-0.002 --	0.280
		Officer	0.071	0.073	-0.001 --	0.669
		Enlisted Flyer	0.072	0.074	-0.002 --	0.682
		Enlisted Groundcrew	0.073	0.076	-0.003 --	0.326
16-6	Time to Diabetes Onset (years)	All	--	--	--	0.871
		Officer	--	--	--	0.993
		Enlisted Flyer	--	--	--	0.390
		Enlisted Groundcrew	--	--	--	0.666
16-9	TSH (μ IU/ml) ^a	All	1.64	1.57	0.07 --	0.105
		Officer	1.69	1.59	0.10 --	0.178
		Enlisted Flyer	1.48	1.58	-0.09 --	0.370
		Enlisted Groundcrew	1.71	1.60	0.11 --	0.088
16-11	Thyroxine (μ g/dl) ^c	All	6.96	6.93	0.03 --	0.565
		Officer	6.58	6.66	-0.08 --	0.370
		Enlisted Flyer	7.12	7.08	0.04 --	0.774
		Enlisted Groundcrew	7.19	7.06	0.13 --	0.129
16-14	Fasting Glucose (mg/dl) ^a	All	103.7	103.8	0.0 --	0.970
		Officer	101.9	101.0	0.9 --	0.550
		Enlisted Flyer	104.1	105.7	-1.6 --	0.516
		Enlisted Groundcrew	104.7	105.1	-0.3 --	0.819

**Table G-13. Summary of Adjusted Results for Continuous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter (Units)	Occupational Category	Adj. Mean		Difference of Adj. Means (95% C.I.)	p-Value
			RH	C		
16-16	2-Hour Postprandial Glucose (mg/dl) ^a	All	105.5	105.0	0.5 --	0.702
		Officer	103.0	99.5	3.5 --	0.086
		Enlisted Flyer	106.4	109.3	-2.9 --	0.405
		Enlisted Groundcrew	106.0	107.2	-1.2 --	0.563
16-20	Serum Insulin (μ IU/ml) ^a	All	49.07	47.99	1.09 --	0.562
		Officer	43.72	41.32	2.40 --	0.353
		Enlisted Flyer	49.21	52.20	-2.99 --	0.548
		Enlisted Groundcrew	53.35	52.31	1.05 --	0.735
16-22	α -1-C Hemoglobin (percent) ^a	All	6.77	6.76	0.01 --	0.882
		Officer	6.61	6.55	0.06 --	0.427
		Enlisted Flyer	6.74	6.88	-0.14 --	0.284
		Enlisted Groundcrew	6.91	6.90	0.01 --	0.905
16-24	Total Testosterone (ng/dl) ^c	All	422.3	423.4	-1.1 --	0.883
		Officer	412.5	414.7	-2.2 --	0.848
		Enlisted Flyer	439.6	430.4	9.2 --	0.618
		Enlisted Groundcrew	418.5	422.2	-3.7 --	0.733
16-26	Free Testosterone (pg/ml) ^c	All	13.80	13.79	0.01 --	0.941
		Officer	13.39	13.61	-0.21 --	0.464
		Enlisted Flyer	14.23	14.10	0.13 --	0.783
		Enlisted Groundcrew	13.81	13.64	0.17 --	0.528
16-28	Estradiol (pg/ml) ^c	All	42.18	42.83	-0.65 --	0.384
		Officer	40.35	43.90	-3.55 --	0.003
		Enlisted Flyer	44.77	42.56	2.21 --	0.241
		Enlisted Groundcrew	42.26	41.37	0.89 --	0.427
16-30	LH (mIU/ml) ^a	All	3.84	3.85	-0.01 --	0.955
		Officer	3.85	3.63	0.22 --	0.185
		Enlisted Flyer	3.55	3.92	-0.37 --	0.147
		Enlisted Groundcrew	4.03	4.10	-0.08 --	0.650
16-32	FSH (mIU/ml) ^a	All	5.92	5.85	0.06 --	0.689
		Officer	6.01	5.62	0.40 --	0.112
		Enlisted Flyer	5.67	5.70	-0.03 --	0.928
		Enlisted Groundcrew	6.06	6.27	-0.21 --	0.401
17-4	CD3+ Cells (T Cells) (cells/mm ³) ^a	All	1,245.2	1,283.7	-38.5 --	0.255
		Officer	1,313.3	1,266.5	46.8 --	0.392
		Enlisted Flyer	1,201.6	1,298.4	-96.8 --	0.224
		Enlisted Groundcrew	1,205.6	1,297.3	-91.7 --	0.073
17-5	CD4+ Cells (Helper T Cells) (cells/mm ³) ^a	All	871.6	894.0	-22.4 --	0.333
		Officer	926.9	906.9	20.0 --	0.601
		Enlisted Flyer	835.6	896.5	-61.0 --	0.261
		Enlisted Groundcrew	842.4	886.4	-44.0 --	0.205
17-6	CD8+ Cells (Suppressor T Cells) (cells/mm ³) ^a	All	565.6	593.0	-27.4 --	0.169
		Officer	565.9	558.6	7.3 --	0.812
		Enlisted Flyer	551.8	624.3	-72.5 --	0.132
		Enlisted Groundcrew	564.7	606.9	-42.2 --	0.170

**Table G-13. Summary of Adjusted Results for Continuous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter (Units)	Occupational Category	Adj. Mean		Difference of Adj. Means (95% C.I.)	p-Value
			RH	C		
17-7	CD16+56+ Cells (Natural Killer Cells) (cells/mm ³) ^a	All	265.8	281.6	-15.8 --	0.106
		Officer	261.0	271.7	-10.7 --	0.478
		Enlisted Flyer	241.8	300.4	-58.7 --	0.011
		Enlisted Groundcrew	280.8	283.3	-2.5 --	0.869
17-8	CD20+ Cells (B Cells) (cells/mm ³) ^a	All	196.2	198.2	-2.0 --	0.808
		Officer	211.3	198.2	13.1 --	0.343
		Enlisted Flyer	185.0	199.7	-14.7 --	0.450
		Enlisted Groundcrew	189.2	199.3	-10.1 --	0.422
17-9	CD3+CD4+ Cells (Helper T Cells) (cells/mm ³) ^a	All	786.5	807.2	-20.7 --	0.347
		Officer	839.6	820.0	19.6 --	0.589
		Enlisted Flyer	753.7	807.5	-53.8 --	0.296
		Enlisted Groundcrew	758.1	800.7	-42.5 --	0.196
17-10	Absolute Lymphocytes (cells/mm ³) ^a	All	1,787.3	1,793.3	-6.1 --	0.827
		Officer	1,805.1	1,752.2	52.9 --	0.227
		Enlisted Flyer	1,740.1	1,814.4	-74.3 --	0.279
		Enlisted Groundcrew	1,795.4	1,830.0	-34.6 --	0.412
17-11	IgA (mg/dl) ^a	All	234.9	236.2	-1.4 --	0.790
		Officer	221.5	224.0	-2.5 --	0.740
		Enlisted Flyer	238.2	238.1	0.1 --	0.995
		Enlisted Groundcrew	246.1	246.8	-0.7 --	0.927
17-12	IgG (mg/dl) ^a	All	1,121.4	1,135.4	-13.9 --	0.217
		Officer	1,101.3	1,115.6	-14.3 --	0.417
		Enlisted Flyer	1,111.7	1,144.1	-32.3 --	0.251
		Enlisted Groundcrew	1,145.3	1,152.2	-6.8 --	0.694
17-13	IgM (mg/dl) ^a	All	90.5	92.4	-2.0 --	0.365
		Officer	89.2	89.9	-0.7 --	0.831
		Enlisted Flyer	89.3	98.1	-8.7 --	0.120
		Enlisted Groundcrew	90.7	91.4	-0.7 --	0.824
18-8	FVC (percent of predicted)	All	94.21	93.79	0.41 (-0.81,1.64)	0.506
		Officer	94.31	93.76	0.56 (-1.39,2.50)	0.575
		Enlisted Flyer	95.01	94.45	0.56 (-2.47,3.59)	0.716
		Enlisted Groundcrew	93.36	93.12	0.23 (-1.61,2.07)	0.804
18-9	FEV ₁ (percent of predicted)	All	90.23	90.06	0.17 (-1.24,1.57)	0.814
		Officer	90.92	90.81	0.11 (-2.13,2.35)	0.925
		Enlisted Flyer	89.19	90.46	-1.27 (-4.75,2.21)	0.475
		Enlisted Groundcrew	90.07	89.32	0.75 (-1.36,2.87)	0.484
18-10	Ratio of Observed FEV ₁ to Observed FVC ^d	All	0.770	0.771	-0.001 --	0.701
		Officer	0.771	0.775	-0.004 --	0.411
		Enlisted Flyer	0.764	0.770	-0.005 --	0.486
		Enlisted Groundcrew	0.774	0.771	0.003 --	0.532

^a Means transformed from natural logarithm scale; difference of means after transformation to original scale; confidence interval not given because analysis was performed on natural logarithm scale; p-value based on difference of means on natural logarithm scale.

**Table G-13. Summary of Adjusted Results for Continuous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

^b Means transformed from natural logarithm (clinical parameter + 0.1) scale; difference of means after transformation to original scale; confidence interval not given because analysis was performed on natural logarithm (clinical parameter + 0.1) scale; p-value based on difference of means on natural logarithm (clinical parameter + 0.1) scale.

^c Means transformed from square root scale; difference of means after transformation to original scale; confidence interval not given because analysis was performed on square root scale; p-value based on difference of means on square root scale.

^d Means transformed from natural logarithm (1 – clinical parameter) scale; difference of means after transformation to original scale; confidence interval not given because analysis was performed on natural logarithm (1 – clinical parameter) scale; p-value based on difference of means on natural logarithm (1 – clinical parameter) scale.

Note: RH = Ranch Hand; C = Comparison.

Table G-14. Summary of Adjusted Results for Continuous Variables – Model 2 (Ranch Hands: Log₂ (Initial Dioxin))

Table Ref.	Clinical Parameter (Units)	R ²	Adj. Slope (Standard Error)	p-Value
9-6	Body Fat (percent) ^a	0.105	0.022 (0.010)	0.020
9-8	Erythrocyte Sedimentation Rate (mm/hr) ^b	0.086	0.041 (0.039)	0.289
10-35	PSA (ng/ml) ^a	0.114	-0.045 (0.031)	0.152
13-11	AST (U/l) ^a	0.057	0.010 (0.014)	0.493
13-13	ALT (U/l) ^a	0.094	0.011 (0.012)	0.357
13-15	GGT (U/l) ^a	0.097	0.008 (0.022)	0.709
13-17	Alkaline Phosphatase (U/l) ^a	0.037	-0.021 (0.011)	0.053
13-19	Total Bilirubin (mg/dl) ^a	0.038	0.004 (0.019)	0.822
13-22	Lactic Dehydrogenase (U/l) ^a	0.036	0.000 (0.007)	0.979
13-24	Cholesterol (mg/dl) ^c	0.044	0.083 (0.054)	0.122
13-26	HDL Cholesterol (mg/dl) ^a	0.132	0.005 (0.010)	0.625
13-28	Cholesterol-HDL Ratio ^a	0.118	0.007 (0.011)	0.499
13-30	Triglycerides (mg/dl) ^a	0.055	0.006 (0.027)	0.830
13-32	Creatine Phosphokinase (U/l) ^a	0.121	-0.004 (0.023)	0.871
13-34	Serum Amylase (U/l) ^a	0.125	-0.029 (0.015)	0.060
13-41	Prealbumin (mg/dl)	0.072	-0.127 (0.207)	0.538
13-43	Albumin (mg/dl)	0.054	-1.264 (12.791)	0.921
13-45	α-1-Acid Glycoprotein (mg/dl) ^a	0.046	-0.016 (0.009)	0.086
13-47	α-1-Antitrypsin (mg/dl) ^c	0.101	0.023 (0.041)	0.582
13-49	α-2-Macroglobulin (mg/dl) ^a	0.135	0.009 (0.010)	0.368
13-51	Apolipoprotein B (mg/dl) ^c	0.033	0.061 (0.048)	0.209
13-53	C3 Complement (mg/dl) ^a	0.083	0.009 (0.006)	0.145
13-55	C4 Complement (mg/dl) ^a	0.019	-0.004 (0.008)	0.638
13-57	Haptoglobin (mg/dl) ^c	0.066	-0.087 (0.111)	0.433
13-59	Transferrin (mg/dl) ^a	0.014	-0.001 (0.006)	0.798
14-7	Systolic Blood Pressure (mm Hg) ^a	0.135	-0.000 (0.006)	0.983
14-9	Diastolic Blood Pressure (mm Hg) ^c	0.073	0.019 (0.023)	0.425
15-3	RBC Count (million/mm ³)	0.070	-0.004 (0.016)	0.821
15-5	WBC Count (thousand/mm ³) ^a	0.213	0.008 (0.009)	0.414
15-7	Hemoglobin (gm/dl)	0.084	0.030 (0.039)	0.443
15-9	Hematocrit (percent)	0.068	0.091 (0.119)	0.443
15-11	Platelet Count (thousand/mm ³) ^c	0.090	0.073 (0.065)	0.262
15-13	Prothrombin Time (seconds) ^a	0.036	0.000 (0.003)	0.956
15-16	Absolute Neutrophils (segs) (thousand/mm ³) ^a	0.198	0.000 (0.012)	0.988
15-17	Absolute Neutrophils (bands) (Nonzero Measurements) (thousand/mm ³) ^a	0.117	-0.075 (0.036)	0.040
15-19	Absolute Lymphocytes (thousand/mm ³) ^a	0.064	0.024 (0.014)	0.087
15-20	Absolute Monocytes (thousand/mm ³) ^c	0.041	0.000 (0.006)	0.999
15-21	Absolute Eosinophils (Nonzero Measurements) (thousand/mm ³) ^a	0.009	0.012 (0.029)	0.670
15-23	Absolute Basophils (Nonzero Measurements) (thousand/mm ³) ^a	0.082	-0.003 (0.026)	0.917
16-6	Time to Diabetes Onset (years) ^d	--	-0.074 (0.030)	0.013
16-9	TSH (μIU/ml) ^a	0.071	-0.019 (0.024)	0.433
16-11	Thyroxine (μg/dl) ^c	0.045	-0.004 (0.010)	0.682
16-14	Fasting Glucose (mg/dl) ^a	0.160	0.023 (0.009)	0.014

**Table G-14. Summary of Adjusted Results for Continuous Variables – Model 2
(Ranch Hands: Log₂ (Initial Dioxin)) (Continued)**

Table Ref.	Clinical Parameter (Units)	R ²	Adj. Slope (Standard Error)	p-Value
16-16	2-Hour Postprandial Glucose (mg/dl) ^a	0.139	0.003 (0.013)	0.832
16-20	Serum Insulin (μ IU/ml) ^a	0.195	0.054 (0.040)	0.170
16-22	α -1-C Hemoglobin (percent) ^a	0.163	0.024 (0.007)	0.001
16-24	Total Testosterone (ng/dl) ^c	0.206	-0.015 (0.161)	0.927
16-26	Free Testosterone (pg/ml) ^c	0.240	-0.008 (0.024)	0.742
16-28	Estradiol (pg/ml) ^c	0.019	0.046 (0.057)	0.423
16-30	LH (mIU/ml) ^a	0.014	-0.008 (0.027)	0.755
16-32	FSH (mIU/ml) ^a	0.051	-0.007 (0.024)	0.763
17-4	CD3+ Cells (T Cells) (cells/mm ³) ^a	0.132	0.042 (0.027)	0.113
17-5	CD4+ Cells (Helper T Cells) (cells/mm ³) ^a	0.152	0.041 (0.026)	0.119
17-6	CD8+ Cells (Suppressor T Cells) (cells/mm ³) ^a	0.039	0.023 (0.034)	0.505
17-7	CD16+56+ Cells (Natural Killer Cells) (cells/mm ³) ^a	0.112	-0.030 (0.038)	0.429
17-8	CD20+ Cells (B Cells) (cells/mm ³) ^a	0.236	0.075 (0.038)	0.052
17-9	CD3+CD4+ Cells (Helper T Cells) (cells/mm ³) ^a	0.159	0.046 (0.028)	0.098
17-10	Absolute Lymphocytes (cells/mm ³) ^a	0.066	0.023 (0.014)	0.109
17-11	IgA (mg/dl) ^a	0.049	0.040 (0.020)	0.046
17-12	IgG (mg/dl) ^a	0.119	-0.003 (0.010)	0.761
17-13	IgM (mg/dl) ^a	0.046	-0.003 (0.022)	0.896
18-8	FVC (percent of predicted)	0.099	-0.303 (0.558)	0.588
18-9	FEV ₁ (percent of predicted)	0.143	0.007 (0.637)	0.991
18-10	Ratio of Observed FEV ₁ to Observed FVC ^e	0.216	-0.011 (0.012)	0.360

^a Slope and standard error based on natural logarithm of clinical parameter versus log₂ (initial dioxin).

^b Slope and standard error based on natural logarithm of (clinical parameter + 0.1) versus log₂ (initial dioxin).

^c Slope and standard error based on square root of clinical parameter versus log₂ (initial dioxin).

^d Slope and standard error based on time to diabetes onset versus log₂ (initial dioxin) under a censored Weibull distribution.

^e Slope and standard error based on natural logarithm of (1 – clinical parameter) versus log₂ (initial dioxin).

--: R-squared not presented because analysis was based on a censored Weibull distribution.

Table G-15. Summary of Adjusted Results for Continuous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category)

Table Ref.	Clinical Parameter (Units)	R ²	Dioxin Category	n	Adj. Mean	Difference of Adj. Mean vs. Comparisons (95% C.I.)		p-Value	
9-6	Body Fat (percent) ^a	0.069	Comparison	1,211	22.25			<0.001	
			Background RH	378	20.73	-1.52 --	0.052		
			Low RH	237	23.00	0.75 --			
			High RH	241	23.51	1.26 --			
			Low plus High RH	478	23.26	1.01 --			
9-8	Erythrocyte Sedimentation Rate (mm/hr) ^b	0.083	Comparison	1,211	5.12			0.484	
			Background RH	376	4.92	-0.20 --	0.992		
			Low RH	237	5.12	0.00 --			
			High RH	240	5.48	0.36 --			
			Low plus High RH	477	5.29	0.17 --			
10-35	PSA (ng/ml) ^a	0.085	Comparison	1,151	1.201			0.527	
			Background RH	362	1.163	-0.038 --	0.441		
			Low RH	221	1.258	0.057 --			
			High RH	234	1.209	0.008 --			
			Low plus High RH	455	1.232	0.031 --			
13-11	AST (U/l) ^a	0.033	Comparison	1,193	23.23			0.305	
			Background RH	374	22.76	-0.47 --	0.207		
			Low RH	235	23.93	0.70 --			
			High RH	238	24.17	0.94 --			
			Low plus High RH	473	24.05	0.82 --			
13-13	ALT (U/l) ^a	0.093	Comparison	1,193	42.21			0.098	
			Background RH	374	41.31	-0.90 --	0.026		
			Low RH	235	43.65	1.44 --			
			High RH	238	43.62	1.41 --			
			Low plus High RH	473	43.63	1.42 --			

Table G-15. Summary of Adjusted Results for Continuous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter (Units)	R ²	Dioxin Category	n	Adj. Mean	Difference of Adj. Mean vs. Comparisons (95% C.I.)		p-Value
13-15	GGT (U/l) ^a	0.115	Comparison	1,193	45.40			
			Background RH	374	44.67	-0.73 --		0.606
			Low RH	235	47.84	2.43 --		0.159
			High RH	238	50.40	5.00 --		0.006
			Low plus High RH	473	49.11	3.71 --		0.006
13-17	Alkaline Phosphatase (U/l) ^a	0.027	Comparison	1,193	80.38			
			Background RH	375	83.68	3.48 --		0.008
			Low RH	235	83.18	2.79 --		0.071
			High RH	239	80.32	-0.06 --		0.967
			Low plus High RH	474	81.72	1.34 --		0.255
13-19	Total Bilirubin (mg/dl) ^a	0.022	Comparison	1,193				
			Background RH	374	0.517	-0.002 --		0.901
			Low RH	235	0.515	-0.003 --		0.884
			High RH	238	0.520	0.003 --		0.861
			Low plus High RH	473	0.517	0.000 --		0.981
13-22	Lactic Dehydrogenase (U/l) ^a	0.036	Comparison	1,192	155.5			
			Background RH	374	156.1	0.6 --		0.737
			Low RH	235	155.0	-0.5 --		0.774
			High RH	238	156.8	1.3 --		0.528
			Low plus High RH	473	155.9	0.4 --		0.812
13-24	Cholesterol (mg/dl) ^c	0.018	Comparison	1,193	212.9			
			Background RH	374	211.0	-1.9 --		0.392
			Low RH	235	210.6	-2.3 --		0.389
			High RH	238	217.3	4.4 --		0.115
			Low plus High RH	473	214.0	1.1 --		0.616
13-26	HDL Cholesterol (mg/dl) ^a	0.116	Comparison	1,192	46.77			
			Background RH	374	47.11	0.34 --		0.628
			Low RH	234	47.10	0.33 --		0.687
			High RH	238	46.77	0.00 --		0.999
			Low plus High RH	472	46.93	0.16 --		0.795

Table G-15. Summary of Adjusted Results for Continuous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter (Units)	R ²	Dioxin Category	n	Adj. Mean	Difference of Adj. Mean vs. Comparisons (95% C.I.)		p-Value
13-28	Cholesterol-HDL Ratio ^a	0.088	Comparison	1,192	4.52			
			Background RH	374	4.45	-0.07 --		0.352
			Low RH	234	4.43	-0.09 --		0.289
			High RH	238	4.61	0.09 --		0.290
			Low plus High RH	472	4.52	0.00 --		0.978
13-30	Triglycerides (mg/dl) ^a	0.082	Comparison	1,193	105.9			
			Background RH	373	103.2	-2.7 --		0.483
			Low RH	235	107.0	1.1 --		0.820
			High RH	238	118.2	12.3 --		0.013
			Low plus High RH	473	112.5	6.6 --		0.070
13-32	Creatine Phosphokinase (U/l) ^a	0.102	Comparison	1,193	140.2			
			Background RH	374	139.5	-0.7 --		0.889
			Low RH	235	142.6	2.4 --		0.679
			High RH	238	143.8	3.6 --		0.549
			Low plus High RH	473	143.2	3.0 --		0.503
13-34	Serum Amylase (U/l) ^a	0.075	Comparison	1,193	63.45			
			Background RH	374	62.33	-1.12 --		0.427
			Low RH	235	66.45	3.00 --		0.078
			High RH	238	61.31	-2.14 --		0.205
			Low plus High RH	473	63.82	0.37 --		0.774
13-41	Prealbumin (mg/dl)	0.055	Comparison	1,193	29.65			
			Background RH	374	29.51	-0.15 (-0.73,0.44)		0.626
			Low RH	235	29.69	0.04 (-0.65,0.73)		0.908
			High RH	238	29.72	0.06 (-0.64,0.77)		0.860
			Low plus High RH	473	29.71	0.05 (-0.48,0.58)		0.847

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Table G-15. Summary of Adjusted Results for Continuous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter (Units)	R ²	Dioxin Category	n	Adj. Mean	Difference of Adj. Mean vs. Comparisons (95% C.I.)	p-Value
13-43	Albumin (mg/dl)	0.042	Comparison	1,193	4,183.0		
			Background RH	374	4,187.9	5.0 (-34.0,43.9)	0.803
			Low RH	235	4,154.2	-28.7 (-74.7,17.3)	0.221
			High RH	238	4,200.2	17.2 (-30.0,64.4)	0.476
			Low plus High RH	473	4,177.3	-5.6 (-41.0,29.8)	0.755
13-45	α -1-Acid Glycoprotein (mg/dl) ^a	0.029	Comparison	1,193	82.72		
			Background RH	374	82.67	-0.05 --	0.961
			Low RH	235	83.42	0.70 --	0.600
			High RH	238	83.78	1.06 --	0.436
			Low plus High RH	473	83.60	0.88 --	0.389
13-47	α -1-Antitrypsin (mg/dl) ^c	0.062	Comparison	1,193	143.8		
			Background RH	374	147.2	3.4 --	0.024
			Low RH	235	145.5	1.7 --	0.339
			High RH	238	148.4	4.6 --	0.011
			Low plus High RH	473	147.0	3.2 --	0.020
13-49	α -2-Macroglobulin (mg/dl) ^a	0.113	Comparison	1,193	163.2		
			Background RH	374	162.2	-1.0 --	0.683
			Low RH	235	159.9	-3.3 --	0.232
			High RH	238	163.3	0.1 --	0.959
			Low plus High RH	473	161.6	-1.6 --	0.461
13-51	Apolipoprotein B (mg/dl) ^c	0.015	Comparison	1,193	112.0		
			Background RH	374	110.0	-2.0 --	0.170
			Low RH	235	109.5	-2.5 --	0.154
			High RH	238	113.6	1.6 --	0.358
			Low plus High RH	473	111.6	-0.4 --	0.761
13-53	C3 Complement (mg/dl) ^a	0.126	Comparison	1,193	120.1		
			Background RH	374	119.5	-0.6 --	0.594
			Low RH	235	121.0	0.9 --	0.518
			High RH	238	121.8	1.7 --	0.217
			Low plus High RH	473	121.4	1.3 --	0.213

Table G-15. Summary of Adjusted Results for Continuous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter (Units)	R ²	Dioxin Category	n	Adj. Mean	Difference of Adj. Mean vs. Comparisons (95% C.I.)		p-Value
13-55	C4 Complement (mg/dl) ^a	0.039	Comparison	1,193	27.24			
			Background RH	374	26.93	-0.31 --		0.336
			Low RH	235	27.27	0.03 --		0.942
			High RH	238	26.97	-0.27 --		0.494
			Low plus High RH	473	27.12	-0.12 --		0.680
13-57	Haptoglobin (mg/dl) ^c	0.044	Comparison	1,193	120.9			
			Background RH	374	129.8	8.9 --		0.014
			Low RH	235	127.5	6.6 --		0.118
			High RH	238	128.0	7.1 --		0.105
			Low plus High RH	473	127.7	6.8 --		0.036
13-59	Transferrin (mg/dl) ^a	0.021	Comparison	1,193	243.0			
			Background RH	374	245.2	2.2 --		0.282
			Low RH	235	246.1	3.1 --		0.200
			High RH	238	247.9	4.9 --		0.050
			Low plus High RH	473	247.0	4.0 --		0.032
14-7	Systolic Blood Pressure (mm Hg) ^a	0.109	Comparison	1,155	128.5			
			Background RH	360	128.5	0.0 --		0.990
			Low RH	221	127.9	-0.6 --		0.651
			High RH	236	127.0	-1.5 --		0.222
			Low plus High RH	457	127.4	-1.1 --		0.262
14-9	Diastolic Blood Pressure (mm Hg) ^c	0.050	Comparison	1,155	75.67			
			Background RH	360	75.56	-0.11 --		0.844
			Low RH	221	75.23	-0.44 --		0.515
			High RH	236	76.69	1.02 --		0.135
			Low plus High RH	457	75.98	0.31 --		0.544
15-3	RBC Count (million/mm ³)	0.052	Comparison	1,210	4.97			
			Background RH	380	4.97	0.00 (-0.04,0.05)		0.893
			Low RH	238	4.93	-0.03 (-0.09,0.02)		0.230
			High RH	239	4.94	-0.02 (-0.08,0.03)		0.441
			Low plus High RH	477	4.94	-0.03 (-0.07,0.01)		0.196

Table G-15. Summary of Adjusted Results for Continuous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter (Units)	R ²	Dioxin Category	n	Adj. Mean	Difference of Adj. Mean vs. Comparisons (95% C.I.)		p-Value
15-5	WBC Count (thousand/mm ³) ^a	0.206	Comparison	1,210	6.27			
			Background RH	380	6.28	0.01 --		0.902
			Low RH	238	6.18	-0.09 --		0.383
			High RH	239	6.33	0.06 --		0.600
			Low plus High RH	477	6.26	-0.01 --		0.831
15-7	Hemoglobin (gm/dl)	0.086	Comparison	1,210	15.06			
			Background RH	380	15.04	-0.02 (-0.14,0.09)		0.679
			Low RH	238	15.04	-0.02 (-0.16,0.11)		0.731
			High RH	239	15.12	0.06 (-0.08,0.20)		0.379
			Low plus High RH	477	15.08	0.02 (-0.08,0.12)		0.715
15-9	Hematocrit (percent)	0.067	Comparison	1,210	45.08			
			Background RH	380	45.04	-0.04 (-0.39,0.32)		0.839
			Low RH	238	44.87	-0.21 (-0.63,0.20)		0.318
			High RH	239	45.22	0.14 (-0.29,0.56)		0.534
			Low plus High RH	477	45.04	-0.04 (-0.36,0.28)		0.817
15-11	Platelet Count (thousand/mm ³) ^c	0.041	Comparison	1,204	204.2			
			Background RH	378	202.3	-1.9 --		0.509
			Low RH	237	204.4	0.2 --		0.959
			High RH	238	214.8	10.6 --		0.002
			Low plus High RH	475	209.6	5.4 --		0.038
15-13	Prothrombin Time (seconds) ^a	0.012	Comparison	986	10.50			
			Background RH	308	10.52	0.02 --		0.695
			Low RH	182	10.46	-0.04 --		0.521
			High RH	193	10.49	-0.01 --		0.823
			Low plus High RH	375	10.47	-0.03 --		0.575

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Table G-15. Summary of Adjusted Results for Continuous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter (Units)	R ²	Dioxin Category	n	Adj. Mean	Difference of Adj. Mean vs. Comparisons (95% C.I.)	p-Value
15-16	Absolute Neutrophils (segs) (thousand/mm ³) ^a	0.171	Comparison	1,210	3.45		
			Background RH	380	3.45	0.00 --	0.961
			Low RH	238	3.44	-0.01 --	0.854
			High RH	239	3.50	0.05 --	0.551
			Low plus High RH	477	3.47	0.02 --	0.780
15-17	Absolute Neutrophils (bands) (Nonzero Measurements) (thousand/mm ³) ^a	0.078	Comparison	1,001	0.148		
			Background RH	315	0.150	0.002 --	0.750
			Low RH	195	0.165	0.017 --	0.076
			High RH	201	0.161	0.013 --	0.166
			Low plus High RH	396	0.163	0.015 --	0.038
15-19	Absolute Lymphocytes (thousand/mm ³) ^a	0.060	Comparison	1,210	1.79		
			Background RH	380	1.83	0.04 --	0.356
			Low RH	238	1.77	-0.02 --	0.572
			High RH	239	1.77	-0.02 --	0.572
			Low plus High RH	477	1.77	-0.02 --	0.457
15-20	Absolute Monocytes (thousand/mm ³) ^c	0.050	Comparison	1,210	0.479		
			Background RH	380	0.464	-0.015 --	0.223
			Low RH	238	0.464	-0.015 --	0.319
			High RH	239	0.499	0.020 --	0.193
			Low plus High RH	477	0.482	0.003 --	0.822
15-21	Absolute Eosinophils (Nonzero Measurements) (thousand/mm ³) ^a	0.025	Comparison	1,063	0.153		
			Background RH	336	0.156	0.003 --	0.677
			Low RH	205	0.147	-0.006 --	0.447
			High RH	211	0.144	-0.009 --	0.229
			Low plus High RH	416	0.146	-0.007 --	0.194
15-23	Absolute Basophils (Nonzero Measurements) (thousand/mm ³) ^a	0.088	Comparison	562	0.075		
			Background RH	168	0.074	-0.001 --	0.657
			Low RH	91	0.071	-0.004 --	0.183
			High RH	109	0.073	-0.002 --	0.563
			Low plus High RH	200	0.072	-0.003 --	0.220

Table G-15. Summary of Adjusted Results for Continuous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter (Units)	R ²	Dioxin Category	n	Adj. Mean	Difference of Adj. Mean vs. Comparisons (95% C.I.)		p-Value	
16-6	Time to Diabetes Onset (years)	--	Comparison	1,183	--			0.024 0.214 0.100 0.061	
			Background RH	375	--				
			Low RH	232	--				
			High RH	238	--				
			Low plus High RH	470	--				
16-9	TSH (μ IU/ml) ^a	0.033	Comparison	1,161	1.57			0.250 0.292 0.454 0.237	
			Background RH	365	1.64	0.07	--		
			Low RH	233	1.64	0.07	--		
			High RH	233	1.62	0.05	--		
			Low plus High RH	466	1.63	0.06	--		
16-11	Thyroxine (μ g/dl) ^c	0.031	Comparison	1,161	6.93			0.969 0.344 0.646 0.357	
			Background RH	365	6.93	0.00	--		
			Low RH	233	7.02	0.09	--		
			High RH	233	6.98	0.05	--		
			Low plus High RH	466	7.00	0.07	--		
16-14	Fasting Glucose (mg/dl) ^a	0.132	Comparison	1,200	103.8			0.418 0.551 0.106 0.482	
			Background RH	377	102.8	-1.0	--		
			Low RH	235	102.9	-0.9	--		
			High RH	240	106.3	2.5	--		
			Low plus High RH	475	104.6	0.8	--		
16-16	2-Hour Postprandial Glucose (mg/dl) ^a	0.116	Comparison	987	105.1			0.585 0.655 0.804 0.900	
			Background RH	338	106.1	1.0	--		
			Low RH	183	106.1	1.0	--		
			High RH	181	104.6	-0.5	--		
			Low plus High RH	364	105.4	0.3	--		

Table G-15. Summary of Adjusted Results for Continuous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter (Units)	R ²	Dioxin Category	n	Adj. Mean	Difference of Adj. Mean vs. Comparisons (95% C.I.)		p-Value
16-20	Serum Insulin (μ IU/ml) ^a	0.208	Comparison	987	47.57			
			Background RH	338	47.31	-0.26 --		0.914
			Low RH	183	49.87	2.30 --		0.455
			High RH	181	51.51	3.94 --		0.226
			Low plus High RH	364	50.68	3.11 --		0.195
16-22	α -1-C Hemoglobin (percent) ^a	0.136	Comparison	1,200	6.78			
			Background RH	377	6.72	-0.06 --		0.412
			Low RH	235	6.70	-0.08 --		0.330
			High RH	240	6.97	0.19 --		0.022
			Low plus High RH	475	6.83	0.05 --		0.363
16-24	Total Testosterone (ng/dl) ^c	0.169	Comparison	1,189	422.9			
			Background RH	370	434.4	11.5 --		0.248
			Low RH	234	414.5	-8.4 --		0.470
			High RH	237	416.8	-6.1 --		0.613
			Low plus High RH	471	415.7	-7.2 --		0.420
16-26	Free Testosterone (pg/ml) ^c	0.220	Comparison	1,189	13.80			
			Background RH	370	13.98	0.18 --		0.459
			Low RH	234	13.50	-0.30 --		0.315
			High RH	237	13.94	0.14 --		0.643
			Low plus High RH	471	13.72	-0.08 --		0.735
16-28	Estradiol (pg/ml) ^c	0.009	Comparison	1,213	42.96			
			Background RH	381	41.76	-1.20 --		0.241
			Low RH	239	41.51	-1.45 --		0.231
			High RH	243	44.13	1.17 --		0.374
			Low plus High RH	482	42.82	-0.14 --		0.888

Table G-15. Summary of Adjusted Results for Continuous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter (Units)	R ²	Dioxin Category	n	Difference of Adj. Mean vs. Comparisons (95% C.I.)		p-Value
					Adj. Mean		
16-30	LH (mIU/ml) ^a	0.047	Comparison	1,213	3.84		
			Background RH	381	4.00	0.16 --	0.281
			Low RH	239	3.73	-0.11 --	0.479
			High RH	243	3.81	-0.03 --	0.839
			Low plus High RH	482	3.77	-0.07 --	0.553
16-32	FSH (mIU/ml) ^a	0.072	Comparison	1,213	5.87		
			Background RH	381	6.02	0.15 --	0.491
			Low RH	239	5.98	0.11 --	0.668
			High RH	243	5.83	-0.04 --	0.855
			Low plus High RH	482	5.90	0.03 --	0.877
17-4	CD3+ Cells (T Cells) (cells/mm ³) ^a	0.096	Comparison	436	1,284.8		
			Background RH	140	1,237.1	-47.7 --	0.308
			Low RH	83	1,272.3	-12.5 --	0.823
			High RH	91	1,239.1	-45.5 --	0.403
			Low plus High RH	174	1,254.9	-29.9 --	0.474
17-5	CD4+ Cells (Helper T Cells) (cells/mm ³) ^a	0.116	Comparison	436	897.9		
			Background RH	140	854.8	-43.1 --	0.176
			Low RH	83	893.6	-4.3 --	0.911
			High RH	91	886.1	-11.8 --	0.752
			Low plus High RH	174	889.7	-8.2 --	0.774
17-6	CD8+ Cells (Suppressor T Cells) (cells/mm ³) ^a	0.040	Comparison	436	592.0		
			Background RH	140	576.2	-15.8 --	0.574
			Low RH	83	576.2	-15.8 --	0.634
			High RH	91	541.9	-50.1 --	0.112
			Low plus High RH	174	558.0	-34.0 --	0.164
17-7	CD16+56+ Cells (Natural Killer Cells) (cells/mm ³) ^a	0.051	Comparison	436	282.6		
			Background RH	140	268.0	-14.6 --	0.285
			Low RH	83	286.7	4.1 --	0.805
			High RH	91	252.0	-30.6 --	0.046
			Low plus High RH	174	268.0	-14.6 --	0.227

Table G-15. Summary of Adjusted Results for Continuous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter (Units)	R ²	Dioxin Category	n	Adj. Mean	Difference of Adj. Mean vs. Comparisons (95% C.I.)		p-Value
17-8	CD20+ Cells (B Cells) (cells/mm ³) ^a	0.111	Comparison	436	198.1			
			Background RH	140	200.6	2.5 --		0.827
			Low RH	82	185.2	-12.9 --		0.325
			High RH	91	194.6	-3.5 --		0.788
			Low plus High RH	173	190.1	-8.0 --		0.419
17-9	CD3+CD4+ Cells (Helper T Cells) (cells/mm ³) ^a	0.122	Comparison	436	809.9			
			Background RH	140	766.6	-43.3 --		0.151
			Low RH	82	806.9	-3.0 --		0.935
			High RH	91	803.8	-6.1 --		0.865
			Low plus High RH	174	805.3	-4.6 --		0.866
17-10	Absolute Lymphocytes (cells/mm ³) ^a	0.060	Comparison	1,154	1,794.7			
			Background RH	365	1,821.6	26.9 --		0.477
			Low RH	220	1,768.7	-26.0 --		0.562
			High RH	229	1,755.8	-38.9 --		0.389
			Low plus High RH	449	1,762.1	-32.6 --		0.340
17-11	IgA (mg/dl) ^a	0.018	Comparison	1,154	236.3			
			Background RH	365	231.0	-5.3 --		0.435
			Low RH	220	233.2	-3.1 --		0.707
			High RH	229	241.0	4.7 --		0.575
			Low plus High RH	449	237.1	0.8 --		0.890
17-12	IgG (mg/dl) ^a	0.070	Comparison	1,154	1,136.6			
			Background RH	365	1,122.1	-14.5 --		0.340
			Low RH	220	1,121.4	-15.2 --		0.404
			High RH	229	1,125.1	-11.5 --		0.535
			Low plus High RH	449	1,123.3	-13.3 --		0.340

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Table G-15. Summary of Adjusted Results for Continuous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter (Units)	R ²	Dioxin Category	n	Adj. Mean	Difference of Adj. Mean vs. Comparisons (95% C.I.)	p-Value
17-13	IgM (mg/dl) ^a	0.019	Comparison	1,154	92.5		
			Background RH	365	91.2	-1.3 --	0.659
			Low RH	220	90.7	-1.8 --	0.599
			High RH	229	89.4	-3.1 --	0.390
			Low plus High RH	449	90.0	-2.5 --	0.358
18-8	FVC (percent of predicted)	0.119	Comparison	1,210	93.87		
			Background RH	380	93.72	-0.15 (-1.80,1.50)	0.859
			Low RH	237	94.29	0.42 (-1.54,2.39)	0.674
			High RH	243	94.61	0.75 (-1.25,2.74)	0.465
			Low plus High RH	480	94.45	0.59 (-0.92,2.09)	0.445
18-9	FEV ₁ (percent of predicted)	0.153	Comparison	1,210	90.03		
			Background RH	380	89.32	-0.70 (-2.59,1.19)	0.469
			Low RH	237	90.58	0.55 (-1.70,2.80)	0.632
			High RH	243	91.19	1.16 (-1.13,3.45)	0.319
			Low plus High RH	480	90.89	0.86 (-0.86,2.58)	0.328
18-10	Ratio of Observed FEV ₁ to Observed FVC ^d	0.195	Comparison	1,210	0.770		
			Background RH	380	0.766	-0.004 --	0.376
			Low RH	237	0.772	0.002 --	0.740
			High RH	243	0.774	0.004 --	0.466
			Low plus High RH	480	0.773	0.003 --	0.481

^a Means transformed from natural logarithm scale; difference of means after transformation to original scale; confidence interval not given because analysis was performed on natural logarithm scale; p-value based on difference of means on natural logarithm scale.

^b Means transformed from natural logarithm (clinical parameter + 0.1) scale; difference of means after transformation to original scale; confidence interval not given because analysis was performed on natural logarithm (clinical parameter + 0.1) scale; p-value based on difference of means on natural logarithm (clinical parameter + 0.1) scale.

^c Means transformed from square root scale; difference of means after transformation to original scale; confidence interval not given because analysis was performed on square root scale; p-value based on difference of means on square root scale.

^d Means transformed from natural logarithm (1 – clinical parameter) scale; difference of means after transformation to original scale; confidence interval not given because analysis was performed on natural logarithm (1 – clinical parameter) scale; p-value based on difference of means on natural logarithm (1 – clinical parameter) scale.

Table G-15. Summary of Adjusted Results for Continuous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Note: RH = Ranch Hand.

Comparison: 1987 Dioxin \leq 10 ppt.

Background: (Ranch Hand): 1987 Dioxin \leq 10 ppt.

Low (Ranch Hand): 1987 Dioxin $>$ 10 ppt, 10 ppt $<$ Initial Dioxin \leq 94 ppt.

High (Ranch Hand): 1987 Dioxin $>$ 10 ppt, Initial Dioxin $>$ 94 ppt.

Table G-16. Summary of Adjusted Results for Continuous Variables – Model 4 (Ranch Hands: Log₂ (1987 Dioxin + 1))

Table Ref.	Clinical Parameter (Units)	R ²	Adj. Slope (Standard Error)	p-Value
9-6	Body Fat (percent) ^a	0.155	0.054 (0.006)	<0.001
9-8	Erythrocyte Sedimentation Rate (mm/hr) ^b	0.088	0.052 (0.025)	0.037
10-35	PSA (ng/ml) ^a	0.076	-0.021 (0.020)	0.312
13-11	AST (U/l) ^a	0.036	0.028 (0.009)	0.002
13-13	ALT (U/l) ^a	0.079	0.033 (0.007)	<0.001
13-15	GGT (U/l) ^a	0.103	0.042 (0.014)	0.003
13-17	Alkaline Phosphatase (U/l) ^a	0.042	-0.021 (0.007)	0.003
13-19	Total Bilirubin (mg/dl) ^a	0.023	0.008 (0.012)	0.519
13-22	Lactic Dehydrogenase (U/l) ^a	0.015	0.006 (0.005)	0.187
13-24	Cholesterol (mg/dl) ^c	0.023	0.046 (0.034)	0.178
13-26	HDL Cholesterol (mg/dl) ^a	0.081	-0.014 (0.007)	0.037
13-28	Cholesterol-HDL Ratio ^a	0.074	0.021 (0.007)	0.006
13-30	Triglycerides (mg/dl) ^a	0.041	0.063 (0.017)	<0.001
13-32	Creatine Phosphokinase (U/l) ^a	0.091	0.039 (0.015)	0.011
13-34	Serum Amylase (U/l) ^a	0.063	-0.030 (0.010)	0.003
13-41	Prealbumin (mg/dl)	0.053	-0.007 (0.140)	0.961
13-43	Albumin (mg/dl)	0.040	-11.121 (8.711)	0.202
13-45	α -1-Acid Glycoprotein (mg/dl) ^a	0.056	-0.012 (0.006)	0.049
13-47	α -1-Antitrypsin (mg/dl) ^c	0.102	-0.047 (0.027)	0.089
13-49	α -2-Macroglobulin (mg/dl) ^a	0.131	-0.005 (0.006)	0.390
13-51	Apolipoprotein B (mg/dl) ^c	0.023	0.046 (0.031)	0.142
13-53	C3 Complement (mg/dl) ^a	0.067	0.017 (0.004)	<0.001
13-55	C4 Complement (mg/dl) ^a	0.044	0.001 (0.005)	0.849
13-57	Haptoglobin (mg/dl) ^c	0.055	-0.116 (0.073)	0.114
13-59	Transferrin (mg/dl) ^a	0.014	0.003 (0.004)	0.385
14-7	Systolic Blood Pressure (mm Hg) ^a	0.126	-0.005 (0.004)	0.165
14-9	Diastolic Blood Pressure (mm Hg) ^c	0.061	0.016 (0.016)	0.315
15-3	RBC Count (million/mm ³)	0.047	-0.001 (0.010)	0.941
15-5	WBC Count (thousand/mm ³) ^a	0.219	0.007 (0.006)	0.263
15-7	Hemoglobin (gm/dl)	0.088	0.021 (0.026)	0.421
15-9	Hematocrit (percent)	0.075	0.029 (0.079)	0.712
15-11	Platelet Count (thousand/mm ³) ^c	0.066	0.049 (0.044)	0.264
15-13	Prothrombin Time (seconds) ^a	0.016	-0.001 (0.002)	0.685
15-16	Absolute Neutrophils (segs) (thousand/mm ³) ^a	0.196	0.006 (0.008)	0.455
15-17	Absolute Neutrophils (bands) (Nonzero Measurements) (thousand/mm ³) ^a	0.076	0.011 (0.024)	0.657
15-19	Absolute Lymphocytes (thousand/mm ³) ^a	0.050	0.007 (0.009)	0.455
15-20	Absolute Monocytes (thousand/mm ³) ^c	0.032	0.007 (0.004)	0.125
15-21	Absolute Eosinophils (Nonzero Measurements) (thousand/mm ³) ^a	0.028	-0.010 (0.020)	0.608
15-23	Absolute Basophils (Nonzero Measurements) (thousand/mm ³) ^a	0.076	-0.006 (0.016)	0.716
16-6	Time to Diabetes Onset (years) ^d	--	-0.118 (0.027)	<0.001
16-9	TSH (μ IU/ml) ^a	0.046	0.008 (0.017)	0.624
16-11	Thyroxine (μ g/dl) ^c	0.047	-0.001 (0.007)	0.862
16-14	Fasting Glucose (mg/dl) ^a	0.082	0.018 (0.006)	0.002

**Table G-16. Summary of Adjusted Results for Continuous Variables – Model 4
(Ranch Hands: \log_2 (Initial Dioxin + 1))(Continued)**

Table Ref.	Clinical Parameter (Units)	R ²	Adj. Slope (Standard Error)	p-Value
16-16	2-Hour Postprandial Glucose (mg/dl) ^a	0.137	0.002 (0.008)	0.850
16-20	Serum Insulin (μ IU/ml) ^a	0.235	0.026 (0.025)	0.305
16-22	α -1-C Hemoglobin (percent) ^a	0.119	0.016 (0.005)	<0.001
16-24	Total Testosterone (ng/dl) ^c	0.193	-0.149 (0.109)	0.172
16-26	Free Testosterone (pg/ml) ^c	0.234	-0.029 (0.016)	0.066
16-28	Estradiol (pg/ml) ^c	0.017	0.019 (0.036)	0.599
16-30	LH (mIU/ml) ^a	0.034	-0.024 (0.017)	0.149
16-32	FSH (mIU/ml) ^a	0.066	-0.001 (0.016)	0.958
17-4	CD3+ Cells (T Cells) (cells/mm ³) ^a	0.088	0.035 (0.018)	0.046
17-5	CD4+ Cells (Helper T Cells) (cells/mm ³) ^a	0.091	0.038 (0.018)	0.033
17-6	CD8+ Cells (Suppressor T Cells) (cells/mm ³) ^a	0.049	0.014 (0.022)	0.540
17-7	CD16+56+ Cells (Natural Killer Cells) (cells/mm ³) ^a	0.059	-0.001 (0.025)	0.960
17-8	CD20+ Cells (B Cells) (cells/mm ³) ^a	0.105	0.030 (0.026)	0.253
17-9	CD3+CD4+ Cells (Helper T Cells) (cells/mm ³) ^a	0.097	0.042 (0.019)	0.025
17-10	Absolute Lymphocytes (cells/mm ³) ^a	0.046	0.008 (0.009)	0.393
17-11	IgA (mg/dl) ^a	0.031	0.021 (0.013)	0.115
17-12	IgG (mg/dl) ^a	0.073	-0.001 (0.006)	0.920
17-13	IgM (mg/dl) ^a	0.025	-0.008 (0.014)	0.586
18-8	FVC (percent of predicted)	0.111	0.377 (0.385)	0.329
18-9	FEV ₁ (percent of predicted)	0.161	0.652 (0.443)	0.142
18-10	Ratio of Observed FEV ₁ to Observed FVC ^e	0.218	-0.012 (0.008)	0.161

^a Slope and standard error based on natural logarithm of clinical parameter versus \log_2 (initial dioxin).

^b Slope and standard error based on natural logarithm of (clinical parameter + 0.1) versus \log_2 (initial dioxin).

^c Slope and standard error based on square root of clinical parameter versus \log_2 (initial dioxin).

^d Slope and standard error based on time to diabetes onset versus \log_2 (initial dioxin) under a censored Weibull distribution.

^e Slope and standard error based on natural logarithm of (1 – clinical parameter) versus \log_2 (initial dioxin).

--: R-squared not presented because analysis was based on a censored Weibull distribution.

Table G-17. Summary of Adjusted Results for Dichotomous Variables – Model 1 (Ranch Hands vs. Comparisons)

Table Ref.	Clinical Parameter	Occupational Category	Adj. Relative Risk (95% C.I.)	p-Value
9-3	Self-perception of Health	All	1.43 (1.09,1.87)	0.010
		Officer	1.26 (0.75,2.12)	0.383
		Enlisted Flyer	1.52 (0.82,2.82)	0.183
		Enlisted Groundcrew	1.48 (1.03,2.14)	0.035
9-4	Appearance of Illness or Distress	All	1.44 (0.67,3.06)	0.350
		Officer	1.13 (0.25,5.16)	0.878
		Enlisted Flyer	2.12 (0.33,13.61)	0.426
		Enlisted Groundcrew	1.42 (0.52,3.89)	0.496
9-5	Relative Age Appearance	All	1.21 (0.88,1.65)	0.237
		Officer	1.29 (0.70,2.36)	0.410
		Enlisted Flyer	1.28 (0.65,2.50)	0.476
		Enlisted Groundcrew	1.14 (0.74,1.75)	0.550
9-7	Body Fat	All	0.92 (0.75,1.11)	0.369
		Officer	1.05 (0.77,1.45)	0.754
		Enlisted Flyer	0.71 (0.43,1.16)	0.173
		Enlisted Groundcrew	0.89 (0.67,1.18)	0.431
9-9	Erythrocyte Sedimentation Rate	All	1.17 (0.84,1.63)	0.356
		Officer	0.86 (0.48,1.53)	0.602
		Enlisted Flyer	1.59 (0.75,3.38)	0.231
		Enlisted Groundcrew	1.29 (0.79,2.10)	0.305
10-3	Skin Neoplasms	All	1.32 (1.09,1.60)	0.005
		Officer	1.38 (1.03,1.85)	0.030
		Enlisted Flyer	1.66 (1.02,2.69)	0.040
		Enlisted Groundcrew	1.16 (0.86,1.56)	0.339
10-4	Malignant Skin Neoplasms	All	1.19 (0.93,1.54)	0.175
		Officer	1.29 (0.90,1.85)	0.161
		Enlisted Flyer	1.86 (0.99,3.51)	0.055
		Enlisted Groundcrew	0.86 (0.56,1.34)	0.509
10-5	Benign Skin Neoplasms	All	1.31 (1.07,1.61)	0.011
		Officer	1.41 (1.02,1.95)	0.035
		Enlisted Flyer	1.41 (0.82,2.43)	0.220
		Enlisted Groundcrew	1.20 (0.88,1.63)	0.257
10-6	Skin Neoplasms of Uncertain Behavior or Unspecified Nature	All	1.18 (0.42,3.36)	0.755
		Officer	--	--
		Enlisted Flyer	--	--
		Enlisted Groundcrew	2.57 (0.73,9.10)	0.144
10-7	Basal Cell Carcinoma	All	1.21 (0.92,1.59)	0.169
		Officer	1.34 (0.92,1.96)	0.129
		Enlisted Flyer	1.97 (1.01,3.85)	0.046
		Enlisted Groundcrew	0.80 (0.49,1.30)	0.363

**Table G-17. Summary of Adjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Adj. Relative Risk (95% C.I.)	p-Value
10-8	Basal Cell Carcinoma (Ear, Face, Head, and Neck)	All	1.20 (0.89,1.62)	0.242
		Officer	1.29 (0.84,1.97)	0.244
		Enlisted Flyer	1.83 (0.90,3.72)	0.097
		Enlisted Groundcrew	0.84 (0.48,1.45)	0.527
10-9	Basal Cell Carcinoma (Trunk)	All	1.24 (0.79,1.94)	0.357
		Officer	1.47 (0.85,2.57)	0.170
		Enlisted Flyer	2.47 (0.59,10.26)	0.214
		Enlisted Groundcrew	0.52 (0.19,1.48)	0.222
10-10	Basal Cell Carcinoma (Upper Extremities)	All	0.76 (0.44,1.34)	0.340
		Officer	0.98 (0.51,1.89)	0.947
		Enlisted Flyer	0.56 (0.05,6.30)	0.635
		Enlisted Groundcrew	0.38 (0.11,1.37)	0.139
10-11	Basal Cell Carcinoma (Lower Extremities)	All	1.38 (0.39,4.85)	0.616
		Officer	1.83 (0.40,8.33)	0.436
		Enlisted Flyer	--	--
		Enlisted Groundcrew	0.78 (0.07,8.71)	0.839
10-12	Squamous Cell Carcinoma	All	1.46 (0.77,2.78)	0.250
		Officer	1.10 (0.49,2.49)	0.813
		Enlisted Flyer	1.86 (0.29,11.86)	0.514
		Enlisted Groundcrew	2.67 (0.73,9.76)	0.139
10-13	Nonmelanoma	All	1.18 (0.91,1.53)	0.219
		Officer	1.31 (0.91,1.90)	0.144
		Enlisted Flyer	2.00 (1.05,3.81)	0.035
		Enlisted Groundcrew	0.76 (0.48,1.22)	0.258
10-14	Melanoma	All	1.78 (0.83,3.79)	0.136
		Officer	1.92 (0.69,5.30)	0.211
		Enlisted Flyer	--	--
		Enlisted Groundcrew	2.01 (0.62,6.50)	0.246
10-15	Systemic Neoplasms (All Sites Combined)	All	0.88 (0.70,1.12)	0.307
		Officer	0.77 (0.56,1.07)	0.125
		Enlisted Flyer	0.98 (0.60,1.61)	0.937
		Enlisted Groundcrew	0.98 (0.70,1.36)	0.888
10-16	Malignant Systemic Neoplasms	All	1.12 (0.74,1.70)	0.592
		Officer	1.09 (0.63,1.88)	0.766
		Enlisted Flyer	1.91 (0.82,4.43)	0.132
		Enlisted Groundcrew	0.82 (0.41,1.67)	0.589
10-17	Benign Systemic Neoplasms	All	0.93 (0.73,1.19)	0.574
		Officer	0.78 (0.55,1.10)	0.155
		Enlisted Flyer	0.95 (0.56,1.59)	0.831
		Enlisted Groundcrew	1.11 (0.79,1.57)	0.548

**Table G-17. Summary of Adjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Adj. Relative Risk (95% C.I.)	p-Value
10-18	Systemic Neoplasms of Uncertain Behavior or Unspecified Nature	All	0.71 (0.34,1.47)	0.355
		Officer	0.96 (0.40,2.31)	0.925
		Enlisted Flyer	0.45 (0.04,5.19)	0.523
		Enlisted Groundcrew	0.44 (0.13,1.50)	0.190
10-19	Malignant Systemic Neoplasms (Eye, Ear, Face, Head, and Neck)	All	0.98 (0.35,2.75)	0.974
		Officer	2.07 (0.53,8.16)	0.298
		Enlisted Flyer	0.38 (0.04,4.02)	0.424
		Enlisted Groundcrew	0.49 (0.08,2.87)	0.429
10-20	Malignant Systemic Neoplasms (Oral Cavity, Pharynx, and Larynx)	All	0.63 (0.16,2.44)	0.501
		Officer	1.35 (0.17,10.61)	0.777
		Enlisted Flyer	0.52 (0.04,6.28)	0.603
		Enlisted Groundcrew	0.31 (0.03,3.40)	0.336
10-21	Malignant Systemic Neoplasms (Thymus, Heart, and Mediastinum)	All	--	--
		Officer	--	--
		Enlisted Flyer	--	--
		Enlisted Groundcrew	--	--
10-22	Malignant Systemic Neoplasms (Thyroid Gland)	All	1.46 (0.20,10.39)	0.708
		Officer	3.08 (0.28,34.40)	0.362
		Enlisted Flyer	--	--
		Enlisted Groundcrew	--	--
10-23	Malignant Systemic Neoplasms (Bronchus and Lung)	All	3.66 (0.78,17.13)	0.070
		Officer	3.51 (0.57,21.64)	0.176
		Enlisted Flyer	2.58 (0.21,31.26)	0.456
		Enlisted Groundcrew	--	--
10-24	Malignant Systemic Neoplasms (Liver)	All	1.57 (0.22,11.35)	0.655
		Officer	--	--
		Enlisted Flyer	--	--
		Enlisted Groundcrew	1.72 (0.11,27.93)	0.703
10-25	Malignant Systemic Neoplasms (Colon and Rectum)	All	1.50 (0.41,5.47)	0.536
		Officer	2.59 (0.37,17.95)	0.335
		Enlisted Flyer	1.57 (0.19,13.30)	0.678
		Enlisted Groundcrew	0.85 (0.13,5.78)	0.872
10-26	Malignant Systemic Neoplasms (Kidney and Bladder)	All	3.12 (0.88,11.04)	0.061
		Officer	1.86 (0.43,8.16)	0.409
		Enlisted Flyer	--	--
		Enlisted Groundcrew	4.20 (0.36,49.46)	0.254
10-27	Malignant Systemic Neoplasms (Prostate)	All	0.69 (0.38,1.25)	0.219
		Officer	0.58 (0.27,1.22)	0.151
		Enlisted Flyer	1.54 (0.41,5.75)	0.521
		Enlisted Groundcrew	0.59 (0.19,1.84)	0.360

**Table G-17. Summary of Adjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Adj. Relative Risk (95% C.I.)	p-Value
10-28	Malignant Systemic Neoplasms (Testicles)	All	--	--
		Officer	--	--
		Enlisted Flyer	--	--
		Enlisted Groundcrew	--	--
10-29	Malignant Systemic Neoplasms (Connective and Other Soft Tissues)	All	0.79 (0.05,12.82)	0.870
		Officer	--	--
		Enlisted Flyer	--	--
		Enlisted Groundcrew	--	--
10-30	Hodgkin's Disease	All	0.29 (0.03,3.23)	0.291
		Officer	0.47 (0.04,5.86)	0.554
		Enlisted Flyer	--	--
		Enlisted Groundcrew	--	--
10-31	Non-Hodgkin's Lymphoma	All	0.18 (0.01,2.61)	0.186
		Officer	--	--
		Enlisted Flyer	--	--
		Enlisted Groundcrew	0.61 (0.02,15.18)	0.762
10-32	Other Malignant Systemic Neoplasms of Lymphoid and Histiocytic Tissue	All	0.70 (0.10,5.03)	0.724
		Officer	0.69 (0.05,9.34)	0.781
		Enlisted Flyer	--	--
		Enlisted Groundcrew	1.57 (0.08,31.01)	0.767
10-33	Malignant Skin and Systemic Neoplasms	All	1.06 (0.80,1.41)	0.668
		Officer	1.14 (0.79,1.65)	0.470
		Enlisted Flyer	1.63 (0.91,2.92)	0.103
		Enlisted Groundcrew	0.78 (0.51,1.19)	0.247
10-34	All Skin and Systemic Neoplasms	All	1.04 (0.83,1.30)	0.756
		Officer	1.06 (0.77,1.46)	0.725
		Enlisted Flyer	1.15 (0.72,1.84)	0.557
		Enlisted Groundcrew	0.98 (0.72,1.33)	0.881
10-36	PSA	All	1.02 (0.64,1.60)	0.947
		Officer	1.45 (0.80,2.63)	0.216
		Enlisted Flyer	0.78 (0.32,1.90)	0.578
		Enlisted Groundcrew	0.68 (0.33,1.41)	0.302
11-3	Inflammatory Diseases	All	13.50 (1.61,113.13)	0.002
		Officer	--	--
		Enlisted Flyer	--	--
		Enlisted Groundcrew	6.38 (0.64,63.30)	0.114
11-4	Hereditary and Degenerative Diseases	All	1.07 (0.78,1.46)	0.688
		Officer	1.13 (0.68,1.89)	0.635
		Enlisted Flyer	1.31 (0.66,2.62)	0.444
		Enlisted Groundcrew	0.92 (0.57,1.48)	0.737

**Table G-17. Summary of Adjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Adj. Relative Risk (95% C.I.)	p-Value
11-5	Peripheral Disorders	All	1.12 (0.89,1.40)	0.341
		Officer	1.25 (0.88,1.78)	0.215
		Enlisted Flyer	0.91 (0.54,1.54)	0.733
		Enlisted Groundcrew	1.09 (0.77,1.54)	0.622
11-6	Other Neurological Disorders	All	1.25 (0.98,1.59)	0.078
		Officer	1.09 (0.65,1.84)	0.734
		Enlisted Flyer	1.33 (0.79,2.21)	0.283
		Enlisted Groundcrew	1.28 (0.92,1.78)	0.136
11-7	Smell	All	1.20 (0.60,2.36)	0.609
		Officer	0.53 (0.16,1.71)	0.286
		Enlisted Flyer	5.12 (0.56,46.70)	0.148
		Enlisted Groundcrew	1.57 (0.58,4.27)	0.376
11-8	Visual Fields	All	0.49 (0.09,2.64)	0.387
		Officer	--	--
		Enlisted Flyer	0.48 (0.04,5.78)	0.566
		Enlisted Groundcrew	0.70 (0.06,8.00)	0.778
11-9	Light Reaction	All	0.13 (0.02,0.98)	0.010
		Officer	--	--
		Enlisted Flyer	0.36 (0.04,3.38)	0.371
		Enlisted Groundcrew	--	--
11-10	Ocular Movement	All	1.17 (0.56,2.42)	0.675
		Officer	0.56 (0.11,2.90)	0.485
		Enlisted Flyer	1.76 (0.29,10.81)	0.543
		Enlisted Groundcrew	1.37 (0.54,3.45)	0.508
11-11	Facial Sensation	All	1.38 (0.19,9.87)	0.750
		Officer	1.45 (0.09,23.48)	0.792
		Enlisted Flyer	--	--
		Enlisted Groundcrew	--	--
11-12	Jaw Clench	All	--	--
		Officer	--	--
		Enlisted Flyer	--	--
		Enlisted Groundcrew	--	--
11-13	Smile	All	2.45 (0.71,8.50)	0.149
		Officer	0.71 (0.06,7.91)	0.777
		Enlisted Flyer	--	--
		Enlisted Groundcrew	3.62 (0.69,19.00)	0.128
11-14	Palpebral Fissure	All	0.71 (0.26,1.94)	0.502
		Officer	0.63 (0.12,3.31)	0.582
		Enlisted Flyer	0.87 (0.05,14.32)	0.921
		Enlisted Groundcrew	0.90 (0.25,3.27)	0.876

**Table G-17. Summary of Adjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Adj. Relative Risk (95% C.I.)	p-Value
11-15	Balance	All	1.38 (0.47,4.03)	0.553
		Officer	3.37 (0.64,17.73)	0.151
		Enlisted Flyer	--	--
		Enlisted Groundcrew	0.73 (0.13,4.07)	0.719
11-16	Speech	All	0.60 (0.18,1.97)	0.388
		Officer	0.76 (0.07,8.59)	0.828
		Enlisted Flyer	--	--
		Enlisted Groundcrew	0.66 (0.16,2.63)	0.551
11-17	Tongue Position Relative to Midline	All	--	--
		Officer	--	--
		Enlisted Flyer	--	--
		Enlisted Groundcrew	--	--
11-18	Palate and Uvula Movement	All	--	--
		Officer	--	--
		Enlisted Flyer	--	--
		Enlisted Groundcrew	--	--
11-19	Cranial Nerve Index	All	1.01 (0.69,1.48)	0.940
		Officer	0.88 (0.46,1.68)	0.694
		Enlisted Flyer	1.23 (0.49,3.08)	0.656
		Enlisted Groundcrew	1.05 (0.61,1.80)	0.856
11-20	Neck Range of Motion	All	1.35 (1.06,1.72)	0.015
		Officer	1.31 (0.90,1.89)	0.153
		Enlisted Flyer	1.97 (1.13,3.42)	0.016
		Enlisted Groundcrew	1.16 (0.78,1.71)	0.466
11-21	Pinprick	All	1.19 (0.81,1.76)	0.368
		Officer	1.28 (0.67,2.43)	0.451
		Enlisted Flyer	1.81 (0.84,3.89)	0.131
		Enlisted Groundcrew	0.85 (0.45,1.60)	0.618
11-22	Light Touch	All	1.13 (0.71,1.81)	0.597
		Officer	1.67 (0.77,3.61)	0.193
		Enlisted Flyer	1.40 (0.56,3.50)	0.470
		Enlisted Groundcrew	0.67 (0.31,1.47)	0.321
11-23	Muscle Status	All	1.50 (0.93,2.40)	0.094
		Officer	0.98 (0.47,2.05)	0.960
		Enlisted Flyer	1.72 (0.63,4.70)	0.289
		Enlisted Groundcrew	2.24 (1.01,4.93)	0.046
11-24	Patellar Reflex	All	0.97 (0.56,1.67)	0.910
		Officer	1.05 (0.48,2.29)	0.901
		Enlisted Flyer	0.16 (0.02,1.32)	0.089
		Enlisted Groundcrew	1.43 (0.61,3.34)	0.408

**Table G-17. Summary of Adjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Adj. Relative Risk (95% C.I.)	p-Value
11-25	Achilles Reflex	All	1.07 (0.84,1.37)	0.594
		Officer	1.17 (0.80,1.70)	0.413
		Enlisted Flyer	0.91 (0.51,1.60)	0.737
		Enlisted Groundcrew	1.05 (0.71,1.55)	0.815
11-26	Biceps Reflex	All	1.31 (0.57,3.05)	0.527
		Officer	1.13 (0.33,3.80)	0.848
		Enlisted Flyer	1.34 (0.18,9.89)	0.776
		Enlisted Groundcrew	1.61 (0.39,6.58)	0.509
11-27	Babinski Reflex	All	0.81 (0.31,2.10)	0.666
		Officer	2.16 (0.35,13.17)	0.403
		Enlisted Flyer	0.36 (0.04,3.59)	0.385
		Enlisted Groundcrew	0.64 (0.16,2.51)	0.526
11-29	Polyneuropathy Prevalence Index	All	0.99 (0.76,1.28)	0.923
		Officer	1.02 (0.68,1.51)	0.941
		Enlisted Flyer	0.86 (0.48,1.52)	0.601
		Enlisted Groundcrew	1.03 (0.67,1.59)	0.877
11-30	Multiple Polyneuropathy Index	All	1.51 (0.94,2.45)	0.092
		Officer	1.44 (0.69,2.98)	0.330
		Enlisted Flyer	1.77 (0.69,4.56)	0.234
		Enlisted Groundcrew	1.43 (0.60,3.39)	0.421
11-31	Confirmed Polyneuropathy Indicator	All	2.35 (0.88,6.22)	0.082
		Officer	0.51 (0.10,2.59)	0.414
		Enlisted Flyer	--	--
		Enlisted Groundcrew	8.59 (0.97,76.27)	0.054
11-32	Tremor	All	0.90 (0.64,1.28)	0.564
		Officer	1.06 (0.59,1.89)	0.850
		Enlisted Flyer	1.14 (0.53,2.44)	0.734
		Enlisted Groundcrew	0.72 (0.42,1.21)	0.212
11-33	Coordination	All	0.86 (0.48,1.56)	0.622
		Officer	1.65 (0.64,4.26)	0.302
		Enlisted Flyer	0.28 (0.03,2.58)	0.263
		Enlisted Groundcrew	0.64 (0.27,1.50)	0.305
11-34	Romberg Sign	All	1.38 (0.47,4.03)	0.553
		Officer	3.37 (0.64,17.73)	0.151
		Enlisted Flyer	--	--
		Enlisted Groundcrew	0.73 (0.13,4.07)	0.719
11-35	Gait	All	1.26 (0.83,1.89)	0.275
		Officer	1.01 (0.54,1.89)	0.972
		Enlisted Flyer	1.05 (0.43,2.59)	0.911
		Enlisted Groundcrew	1.79 (0.91,3.49)	0.090

**Table G-17. Summary of Adjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Adj. Relative Risk (95% C.I.)	p-Value
11-36	CNS Index	All	0.99 (0.75,1.31)	0.957
		Officer	1.01 (0.64,1.58)	0.975
		Enlisted Flyer	0.92 (0.50,1.70)	0.799
		Enlisted Groundcrew	1.01 (0.67,1.54)	0.950
12-3	Psychoses	All	1.03 (0.65,1.63)	0.905
		Officer	1.12 (0.47,2.71)	0.796
		Enlisted Flyer	1.85 (0.68,5.04)	0.230
		Enlisted Groundcrew	0.76 (0.40,1.47)	0.423
12-4	Alcohol Dependence	All	1.04 (0.74,1.48)	0.816
		Officer	0.82 (0.43,1.58)	0.557
		Enlisted Flyer	0.94 (0.43,2.04)	0.871
		Enlisted Groundcrew	1.25 (0.76,2.03)	0.377
12-5	Drug Dependence	All	0.58 (0.09,3.74)	0.553
		Officer	--	--
		Enlisted Flyer	--	--
		Enlisted Groundcrew	0.78 (0.11,5.56)	0.802
12-6	Anxiety	All	1.00 (0.82,1.23)	0.979
		Officer	0.93 (0.64,1.35)	0.709
		Enlisted Flyer	1.01 (0.63,1.63)	0.953
		Enlisted Groundcrew	1.04 (0.79,1.38)	0.776
12-7	Other Neuroses	All	1.08 (0.90,1.29)	0.434
		Officer	0.80 (0.60,1.07)	0.127
		Enlisted Flyer	1.04 (0.66,1.65)	0.857
		Enlisted Groundcrew	1.44 (1.09,1.91)	0.011
12-8	SCL-90-R Anxiety	All	0.85 (0.63,1.14)	0.267
		Officer	0.75 (0.39,1.46)	0.400
		Enlisted Flyer	0.53 (0.27,1.06)	0.073
		Enlisted Groundcrew	1.02 (0.70,1.50)	0.904
12-9	SCL-90-R Depression	All	0.79 (0.61,1.03)	0.077
		Officer	0.89 (0.54,1.46)	0.642
		Enlisted Flyer	0.45 (0.24,0.84)	0.013
		Enlisted Groundcrew	0.90 (0.64,1.28)	0.562
12-10	SCL-90-R Hostility	All	0.81 (0.58,1.13)	0.217
		Officer	0.71 (0.34,1.49)	0.367
		Enlisted Flyer	0.66 (0.30,1.45)	0.301
		Enlisted Groundcrew	0.90 (0.59,1.39)	0.642
12-11	SCL-90-R Interpersonal Sensitivity	All	0.79 (0.61,1.02)	0.070
		Officer	0.93 (0.55,1.56)	0.772
		Enlisted Flyer	0.52 (0.28,0.93)	0.029
		Enlisted Groundcrew	0.86 (0.61,1.20)	0.366

**Table G-17. Summary of Adjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Adj. Relative Risk (95% C.I.)	p-Value
12-12	SCL-90-R Obsessive-Compulsive Behavior	All	0.83 (0.65,1.07)	0.157
		Officer	0.95 (0.58,1.54)	0.824
		Enlisted Flyer	0.77 (0.44,1.35)	0.365
		Enlisted Groundcrew	0.81 (0.57,1.14)	0.225
12-13	SCL-90-R Paranoid Ideation	All	0.98 (0.68,1.40)	0.898
		Officer	0.84 (0.35,2.03)	0.698
		Enlisted Flyer	0.56 (0.23,1.37)	0.206
		Enlisted Groundcrew	1.17 (0.76,1.81)	0.479
12-14	SCL-90-R Phobic Anxiety	All	0.92 (0.68,1.24)	0.570
		Officer	0.53 (0.25,1.11)	0.090
		Enlisted Flyer	0.59 (0.29,1.18)	0.136
		Enlisted Groundcrew	1.24 (0.85,1.81)	0.270
12-15	SCL-90-R Psychoticism	All	0.81 (0.62,1.06)	0.116
		Officer	0.68 (0.39,1.17)	0.162
		Enlisted Flyer	0.67 (0.36,1.27)	0.223
		Enlisted Groundcrew	0.92 (0.65,1.31)	0.651
12-16	SCL-90-R Somatization	All	1.02 (0.80,1.31)	0.847
		Officer	1.02 (0.60,1.74)	0.948
		Enlisted Flyer	0.67 (0.40,1.13)	0.133
		Enlisted Groundcrew	1.22 (0.88,1.70)	0.232
12-17	SCL-90-R Global Severity Index (GSI)	All	0.87 (0.67,1.13)	0.285
		Officer	0.93 (0.54,1.61)	0.805
		Enlisted Flyer	0.57 (0.32,1.04)	0.066
		Enlisted Groundcrew	0.97 (0.70,1.36)	0.876
12-18	SCL-90-R Positive Symptom Total (PST)	All	0.80 (0.62,1.03)	0.083
		Officer	0.80 (0.48,1.33)	0.382
		Enlisted Flyer	0.67 (0.38,1.18)	0.168
		Enlisted Groundcrew	0.86 (0.61,1.20)	0.365
12-19	SCL-90-R Positive Symptom Distress Index (PSDI)	All	1.20 (0.86,1.69)	0.283
		Officer	1.29 (0.62,2.68)	0.495
		Enlisted Flyer	0.78 (0.36,1.66)	0.513
		Enlisted Groundcrew	1.37 (0.88,2.12)	0.165
13-3	Uncharacterized Hepatitis	All	1.18 (0.62,2.26)	0.617
		Officer	1.05 (0.33,3.35)	0.935
		Enlisted Flyer	1.62 (0.35,7.40)	0.533
		Enlisted Groundcrew	1.13 (0.45,2.85)	0.795
13-4	Jaundice	All	0.49 (0.25,0.96)	0.028
		Officer	0.46 (0.18,1.17)	0.103
		Enlisted Flyer	3.47 (0.36,33.8)	0.284
		Enlisted Groundcrew	0.29 (0.08,1.03)	0.055

**Table G-17. Summary of Adjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Adj. Relative Risk (95% C.I.)	p-Value
13-5	Chronic Liver Disease and Cirrhosis (Alcohol-related)	All	0.93 (0.60,1.45)	0.762
		Officer	1.50 (0.71,3.19)	0.290
		Enlisted Flyer	0.70 (0.26,1.88)	0.474
		Enlisted Groundcrew	0.75 (0.39,1.45)	0.390
13-6	Chronic Liver Disease and Cirrhosis (Non-alcohol-related)	All	1.43 (0.68,3.03)	0.348
		Officer	2.47 (0.58,10.52)	0.219
		Enlisted Flyer	0.77 (0.13,4.71)	0.777
		Enlisted Groundcrew	1.32 (0.47,3.69)	0.598
13-7	Liver Abscess and Sequelae of Chronic Liver Disease	All	1.45 (0.09,23.24)	0.795
		Officer	--	--
		Enlisted Flyer	--	--
		Enlisted Groundcrew	--	--
13-8	Enlarged Liver (Hepatomegaly)	All	0.73 (0.38,1.41)	0.339
		Officer	0.78 (0.26,2.36)	0.662
		Enlisted Flyer	2.53 (0.62,10.38)	0.198
		Enlisted Groundcrew	0.29 (0.08,1.03)	0.057
13-9	Other Liver Disorders	All	1.19 (0.97,1.45)	0.090
		Officer	1.15 (0.83,1.57)	0.400
		Enlisted Flyer	0.98 (0.60,1.61)	0.933
		Enlisted Groundcrew	1.31 (0.98,1.75)	0.073
13-10	Current Hepatomegaly	All	2.13 (0.80,5.67)	0.127
		Officer	3.17 (0.57,17.56)	0.187
		Enlisted Flyer	--	--
		Enlisted Groundcrew	1.18 (0.31,4.51)	0.805
13-12	AST	All	1.14 (0.81,1.61)	0.448
		Officer	1.09 (0.63,1.89)	0.763
		Enlisted Flyer	0.84 (0.36,1.92)	0.671
		Enlisted Groundcrew	1.35 (0.81,2.28)	0.252
13-14	ALT	All	1.12 (0.80,1.57)	0.495
		Officer	1.58 (0.86,2.89)	0.138
		Enlisted Flyer	0.97 (0.46,2.01)	0.927
		Enlisted Groundcrew	0.97 (0.60,1.57)	0.889
13-16	GGT	All	1.08 (0.80,1.45)	0.604
		Officer	1.24 (0.75,2.06)	0.399
		Enlisted Flyer	1.39 (0.73,2.65)	0.310
		Enlisted Groundcrew	0.86 (0.55,1.35)	0.512
13-18	Alkaline Phosphatase	All	1.34 (0.74,2.42)	0.332
		Officer	0.45 (0.14,1.41)	0.172
		Enlisted Flyer	2.03 (0.56,7.40)	0.284
		Enlisted Groundcrew	2.46 (0.99,6.13)	0.053

**Table G-17. Summary of Adjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Adj. Relative Risk (95% C.I.)	p-Value
13-20	Total Bilirubin	All	0.86 (0.58,1.25)	0.420
		Officer	0.90 (0.52,1.57)	0.723
		Enlisted Flyer	1.15 (0.43,3.08)	0.779
		Enlisted Groundcrew	0.71 (0.38,1.33)	0.286
13-21	Direct Bilirubin	All	0.32 (0.04,2.82)	0.254
		Officer	0.50 (0.05,4.90)	0.551
		Enlisted Flyer	--	--
		Enlisted Groundcrew	--	--
13-23	Lactic Dehydrogenase	All	0.90 (0.67,1.21)	0.479
		Officer	0.86 (0.54,1.37)	0.530
		Enlisted Flyer	1.03 (0.47,2.24)	0.945
		Enlisted Groundcrew	0.90 (0.58,1.39)	0.625
13-25	Cholesterol	All	1.04 (0.82,1.34)	0.726
		Officer	0.80 (0.53,1.23)	0.312
		Enlisted Flyer	1.00 (0.54,1.83)	0.993
		Enlisted Groundcrew	1.28 (0.90,1.82)	0.167
13-27	HDL Cholesterol	All	1.13 (0.81,1.57)	0.473
		Officer	1.15 (0.62,2.15)	0.650
		Enlisted Flyer	0.98 (0.47,2.04)	0.957
		Enlisted Groundcrew	1.18 (0.74,1.87)	0.483
13-29	Cholesterol-HDL Ratio	All	1.01 (0.85,1.22)	0.878
		Officer	1.09 (0.81,1.47)	0.563
		Enlisted Flyer	0.67 (0.43,1.04)	0.075
		Enlisted Groundcrew	1.11 (0.85,1.45)	0.436
13-31	Triglycerides	All	1.12 (0.90,1.39)	0.318
		Officer	1.10 (0.76,1.58)	0.628
		Enlisted Flyer	0.66 (0.39,1.12)	0.123
		Enlisted Groundcrew	1.37 (1.00,1.88)	0.047
13-33	Creatine Phosphokinase	All	0.87 (0.63,1.20)	0.390
		Officer	0.84 (0.50,1.41)	0.519
		Enlisted Flyer	0.55 (0.21,1.41)	0.210
		Enlisted Groundcrew	1.00 (0.63,1.58)	0.998
13-35	Serum Amylase	All	0.91 (0.54,1.54)	0.733
		Officer	0.43 (0.18,1.03)	0.058
		Enlisted Flyer	1.66 (0.36,7.69)	0.514
		Enlisted Groundcrew	1.60 (0.73,3.50)	0.240
13-36	Antibodies for Hepatitis A	All	0.93 (0.76,1.12)	0.434
		Officer	0.95 (0.68,1.31)	0.739
		Enlisted Flyer	1.07 (0.69,1.68)	0.754
		Enlisted Groundcrew	0.85 (0.64,1.14)	0.285

**Table G-17. Summary of Adjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Adj. Relative Risk (95% C.I.)	p-Value
13-37	Prior Hepatitis B	All	0.59 (0.44,0.80)	<0.001
		Officer	0.47 (0.25,0.91)	0.024
		Enlisted Flyer	0.58 (0.31,1.07)	0.079
		Enlisted Groundcrew	0.66 (0.44,0.97)	0.035
13-38	Current Hepatitis B	All	0.56 (0.05,6.93)	0.646
		Officer	--	--
		Enlisted Flyer	--	--
		Enlisted Groundcrew	0.68 (0.06,8.27)	0.762
13-39	Antibodies for Hepatitis C	All	0.63 (0.27,1.47)	0.274
		Officer	0.36 (0.04,3.27)	0.367
		Enlisted Flyer	0.61 (0.05,6.87)	0.690
		Enlisted Groundcrew	0.73 (0.27,1.98)	0.532
13-40	Stool Hemoccult	All	0.78 (0.49,1.25)	0.301
		Officer	0.90 (0.45,1.80)	0.774
		Enlisted Flyer	0.34 (0.07,1.70)	0.191
		Enlisted Groundcrew	0.82 (0.41,1.64)	0.574
13-42	Prealbumin	All	1.87 (0.82,4.26)	0.136
		Officer	1.03 (0.32,3.29)	0.962
		Enlisted Flyer	1.64 (0.09,28.94)	0.736
		Enlisted Groundcrew	4.27 (1.05,17.39)	0.043
13-44	Albumin	All	0.45 (0.12,1.65)	0.200
		Officer	1.08 (0.24,4.91)	0.918
		Enlisted Flyer	--	--
		Enlisted Groundcrew	--	--
13-46	α -1-Acid Glycoprotein	All	1.39 (0.88,2.21)	0.163
		Officer	0.73 (0.31,1.76)	0.487
		Enlisted Flyer	1.78 (0.64,4.95)	0.270
		Enlisted Groundcrew	1.86 (0.96,3.60)	0.066
13-50	α -2-Macroglobulin	All	0.70 (0.42,1.16)	0.157
		Officer	0.59 (0.25,1.40)	0.234
		Enlisted Flyer	0.46 (0.15,1.39)	0.169
		Enlisted Groundcrew	1.01 (0.46,2.19)	0.988
13-52	Apolipoprotein B	All	0.85 (0.71,1.02)	0.073
		Officer	0.80 (0.61,1.06)	0.115
		Enlisted Flyer	0.53 (0.34,0.82)	0.005
		Enlisted Groundcrew	1.07 (0.82,1.40)	0.603
13-54	C3 Complement	All	0.79 (0.42,1.50)	0.474
		Officer	0.62 (0.23,1.63)	0.333
		Enlisted Flyer	0.27 (0.03,2.33)	0.233
		Enlisted Groundcrew	1.41 (0.54,3.71)	0.487

**Table G-17. Summary of Adjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Adj. Relative Risk (95% C.I.)	p-Value
13-56	C4 Complement	All	1.46 (0.20,10.59)	0.707
		Officer	2.85 (0.26,31.68)	0.394
		Enlisted Flyer	--	--
		Enlisted Groundcrew	--	--
13-58	Haptoglobin	All	1.26 (1.04,1.52)	0.020
		Officer	1.18 (0.85,1.64)	0.316
		Enlisted Flyer	1.27 (0.81,2.01)	0.295
		Enlisted Groundcrew	1.31 (0.99,1.73)	0.061
13-60	Transferrin	All	0.71 (0.52,0.97)	0.027
		Officer	0.63 (0.38,1.04)	0.070
		Enlisted Flyer	0.83 (0.41,1.68)	0.601
		Enlisted Groundcrew	0.74 (0.47,1.18)	0.208
14-3	Essential Hypertension	All	0.96 (0.79,1.17)	0.708
		Officer	0.85 (0.63,1.16)	0.317
		Enlisted Flyer	1.27 (0.79,2.04)	0.316
		Enlisted Groundcrew	0.96 (0.72,1.29)	0.811
14-4	Heart Disease (Excluding Essential Hypertension)	All	1.26 (1.04,1.53)	0.018
		Officer	1.21 (0.88,1.66)	0.238
		Enlisted Flyer	2.10 (1.28,3.45)	0.004
		Enlisted Groundcrew	1.10 (0.83,1.46)	0.496
14-5	Myocardial Infarction	All	1.02 (0.73,1.42)	0.915
		Officer	0.86 (0.50,1.46)	0.567
		Enlisted Flyer	1.57 (0.72,3.43)	0.255
		Enlisted Groundcrew	0.99 (0.59,1.67)	0.975
14-6	Stroke or Transient Ischemia Attack	All	1.21 (0.51,2.85)	0.666
		Officer	1.18 (0.31,4.51)	0.806
		Enlisted Flyer	--	--
		Enlisted Groundcrew	1.80 (0.53,6.06)	0.345
14-8	Systolic Blood Pressure	All	0.99 (0.79,1.24)	0.899
		Officer	0.95 (0.67,1.35)	0.784
		Enlisted Flyer	1.13 (0.66,1.93)	0.661
		Enlisted Groundcrew	0.96 (0.67,1.38)	0.832
14-10	Diastolic Blood Pressure	All	1.02 (0.67,1.56)	0.916
		Officer	1.21 (0.62,2.35)	0.576
		Enlisted Flyer	1.18 (0.41,3.37)	0.760
		Enlisted Groundcrew	0.84 (0.44,1.59)	0.584
14-11	Heart Sounds	All	0.71 (0.45,1.13)	0.139
		Officer	0.60 (0.28,1.29)	0.190
		Enlisted Flyer	0.65 (0.23,1.84)	0.419
		Enlisted Groundcrew	0.86 (0.42,1.74)	0.675

**Table G-17. Summary of Adjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Adj. Relative Risk (95% C.I.)	p-Value
14-12	Overall Electrocardiograph	All	0.96 (0.78,1.18)	0.688
		Officer	1.07 (0.79,1.47)	0.655
		Enlisted Flyer	1.24 (0.76,2.00)	0.389
		Enlisted Groundcrew	0.76 (0.55,1.05)	0.095
14-13	Right Bundle Branch Block	All	0.88 (0.49,1.56)	0.650
		Officer	0.89 (0.36,2.22)	0.807
		Enlisted Flyer	1.47 (0.49,4.44)	0.493
		Enlisted Groundcrew	0.55 (0.19,1.59)	0.271
14-14	Left Bundle Branch Block	All	0.47 (0.15,1.50)	0.182
		Officer	0.21 (0.02,1.76)	0.150
		Enlisted Flyer	--	--
		Enlisted Groundcrew	0.56 (0.11,2.83)	0.479
14-15	Non-Specific ST- and T-Wave Changes	All	1.00 (0.79,1.27)	0.984
		Officer	1.03 (0.71,1.48)	0.882
		Enlisted Flyer	1.22 (0.69,2.14)	0.495
		Enlisted Groundcrew	0.88 (0.60,1.29)	0.517
14-16	Bradycardia	All	0.69 (0.41,1.16)	0.151
		Officer	0.74 (0.38,1.42)	0.360
		Enlisted Flyer	1.14 (0.32,4.09)	0.846
		Enlisted Groundcrew	0.36 (0.10,1.30)	0.120
14-17	Tachycardia	All	2.94 (0.69,12.51)	0.129
		Officer	--	--
		Enlisted Flyer	--	--
		Enlisted Groundcrew	1.54 (0.19,12.63)	0.685
14-18	Arrhythmia	All	1.02 (0.69,1.52)	0.913
		Officer	1.39 (0.75,2.55)	0.296
		Enlisted Flyer	1.26 (0.54,2.97)	0.591
		Enlisted Groundcrew	0.62 (0.31,1.25)	0.180
14-19	Evidence of Prior Myocardial Infarction	All	0.90 (0.56,1.43)	0.649
		Officer	0.88 (0.43,1.78)	0.718
		Enlisted Flyer	1.02 (0.35,2.96)	0.972
		Enlisted Groundcrew	0.86 (0.40,1.85)	0.709
14-20	ECG: Other Diagnoses	All	4.67 (0.47,46.79)	0.153
		Officer	--	--
		Enlisted Flyer	--	--
		Enlisted Groundcrew	3.29 (0.28,38.94)	0.346
14-21	Funduscopic Examination	All	0.92 (0.69,1.22)	0.562
		Officer	1.27 (0.79,2.02)	0.321
		Enlisted Flyer	1.06 (0.59,1.91)	0.852
		Enlisted Groundcrew	0.62 (0.39,0.99)	0.047

**Table G-17. Summary of Adjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Adj. Relative Risk (95% C.I.)	p-Value
14-22	Carotid Bruits	All	0.94 (0.53,1.65)	0.823
		Officer	0.72 (0.26,1.99)	0.524
		Enlisted Flyer	1.94 (0.58,6.46)	0.283
		Enlisted Groundcrew	0.78 (0.33,1.86)	0.578
14-23	Radial Pulses	All	2.85 (0.67,12.16)	0.143
		Officer	1.24 (0.16,9.95)	0.837
		Enlisted Flyer	--	--
		Enlisted Groundcrew	5.69 (0.54,60.05)	0.148
14-24	Femoral Pulses	All	1.66 (0.79,3.49)	0.178
		Officer	1.51 (0.52,4.38)	0.448
		Enlisted Flyer	1.48 (0.27,8.02)	0.652
		Enlisted Groundcrew	2.08 (0.55,7.87)	0.282
14-25	Popliteal Pulses	All	1.04 (0.56,1.90)	0.911
		Officer	0.95 (0.35,2.52)	0.911
		Enlisted Flyer	0.99 (0.21,4.82)	0.995
		Enlisted Groundcrew	1.13 (0.46,2.79)	0.784
14-26	Dorsalis Pedis Pulses	All	0.97 (0.69,1.37)	0.857
		Officer	1.27 (0.73,2.22)	0.398
		Enlisted Flyer	1.33 (0.62,2.86)	0.463
		Enlisted Groundcrew	0.64 (0.37,1.12)	0.117
14-27	Posterior Tibial Pulses	All	1.25 (0.84,1.86)	0.280
		Officer	1.40 (0.73,2.68)	0.307
		Enlisted Flyer	1.17 (0.49,2.78)	0.724
		Enlisted Groundcrew	1.16 (0.62,2.16)	0.649
14-28	Leg Pulses	All	1.03 (0.76,1.40)	0.850
		Officer	1.30 (0.79,2.16)	0.306
		Enlisted Flyer	1.46 (0.74,2.88)	0.270
		Enlisted Groundcrew	0.71 (0.44,1.14)	0.158
14-29	Peripheral Pulses	All	1.05 (0.77,1.42)	0.761
		Officer	1.27 (0.77,2.09)	0.353
		Enlisted Flyer	1.48 (0.75,2.92)	0.260
		Enlisted Groundcrew	0.75 (0.47,1.21)	0.242
14-30	ICVI Index	All	0.99 (0.61,1.60)	0.958
		Officer	1.25 (0.57,2.70)	0.577
		Enlisted Flyer	0.50 (0.17,1.51)	0.218
		Enlisted Groundcrew	1.12 (0.53,2.39)	0.764
15-14	Prothrombin Time	All	1.13 (0.49,2.60)	0.781
		Officer	1.29 (0.43,3.91)	0.650
		Enlisted Flyer	--	--
		Enlisted Groundcrew	1.15 (0.30,4.35)	0.838

**Table G-17. Summary of Adjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Adj. Relative Risk (95% C.I.)	p-Value
15-15	RBC Morphology	All	1.16 (0.82,1.64)	0.400
		Officer	1.03 (0.57,1.87)	0.923
		Enlisted Flyer	1.09 (0.52,2.30)	0.814
		Enlisted Groundcrew	1.31 (0.78,2.22)	0.307
15-18	Absolute Neutrophils (bands) (Zero vs. Nonzero)	All	0.99 (0.79,1.25)	0.956
		Officer	0.74 (0.51,1.09)	0.134
		Enlisted Flyer	1.88 (1.08,3.27)	0.026
		Enlisted Groundcrew	0.98 (0.69,1.39)	0.918
15-22	Absolute Eosinophils (Zero vs. Nonzero)	All	1.01 (0.77,1.31)	0.970
		Officer	1.18 (0.74,1.87)	0.489
		Enlisted Flyer	0.95 (0.49,1.87)	0.893
		Enlisted Groundcrew	0.92 (0.64,1.34)	0.674
15-24	Absolute Basophils (Zero vs. Nonzero)	All	1.16 (0.97,1.38)	0.106
		Officer	1.16 (0.88,1.53)	0.303
		Enlisted Flyer	0.87 (0.57,1.34)	0.529
		Enlisted Groundcrew	1.28 (0.98,1.68)	0.065
16-3	Past Thyroid Disease	All	0.89 (0.64,1.22)	0.459
		Officer	0.91 (0.56,1.48)	0.701
		Enlisted Flyer	1.37 (0.64,2.94)	0.419
		Enlisted Groundcrew	0.70 (0.41,1.19)	0.189
16-4	Composite Diabetes Indicator	All	1.04 (0.81,1.33)	0.755
		Officer	1.08 (0.72,1.63)	0.711
		Enlisted Flyer	0.82 (0.45,1.47)	0.498
		Enlisted Groundcrew	1.11 (0.77,1.61)	0.572
16-7	Thyroid Gland	All	0.54 (0.21,1.39)	0.183
		Officer	0.53 (0.17,1.67)	0.276
		Enlisted Flyer	1.23 (0.08,19.88)	0.883
		Enlisted Groundcrew	0.38 (0.04,3.39)	0.384
16-8	Testicular Examination	All	1.20 (0.77,1.87)	0.427
		Officer	0.84 (0.44,1.62)	0.611
		Enlisted Flyer	1.31 (0.48,3.55)	0.595
		Enlisted Groundcrew	1.96 (0.88,4.39)	0.101
16-12	Thyroxine	All	1.04 (0.61,1.80)	0.875
		Officer	1.21 (0.57,2.55)	0.622
		Enlisted Flyer	1.24 (0.25,6.24)	0.796
		Enlisted Groundcrew	0.80 (0.32,2.02)	0.636
16-13	Anti-Thyroid Antibodies	All	1.01 (0.32,3.21)	0.981
		Officer	0.73 (0.13,4.02)	0.717
		Enlisted Flyer	2.62 (0.24,29.23)	0.434
		Enlisted Groundcrew	0.73 (0.07,8.06)	0.796

**Table G-17. Summary of Adjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Adj. Relative Risk (95% C.I.)	p-Value
16-15	Fasting Glucose	All	1.07 (0.84,1.37)	0.562
		Officer	1.11 (0.75,1.64)	0.611
		Enlisted Flyer	0.90 (0.50,1.60)	0.712
		Enlisted Groundcrew	1.12 (0.78,1.61)	0.526
16-17	2-Hour Postprandial Glucose	All	0.98 (0.75,1.30)	0.912
		Officer	1.42 (0.92,2.20)	0.110
		Enlisted Flyer	0.81 (0.43,1.54)	0.526
		Enlisted Groundcrew	0.75 (0.48,1.16)	0.191
16-18	Fasting Urinary Glucose	All	0.98 (0.63,1.52)	0.924
		Officer	1.40 (0.61,3.22)	0.432
		Enlisted Flyer	1.13 (0.41,3.11)	0.816
		Enlisted Groundcrew	0.77 (0.42,1.43)	0.412
16-19	2-Hour Postprandial Urinary Glucose	All	1.22 (0.97,1.53)	0.094
		Officer	1.47 (1.01,2.14)	0.044
		Enlisted Flyer	0.73 (0.42,1.28)	0.276
		Enlisted Groundcrew	1.26 (0.90,1.76)	0.180
16-23	α -1-C Hemoglobin	All	1.14 (0.85,1.53)	0.373
		Officer	1.13 (0.67,1.90)	0.652
		Enlisted Flyer	0.65 (0.33,1.28)	0.210
		Enlisted Groundcrew	1.43 (0.95,2.16)	0.087
16-25	Total Testosterone	All	1.16 (0.83,1.63)	0.378
		Officer	1.22 (0.71,2.07)	0.475
		Enlisted Flyer	1.21 (0.50,2.96)	0.673
		Enlisted Groundcrew	1.11 (0.67,1.83)	0.688
16-27	Free Testosterone	All	1.09 (0.54,2.19)	0.812
		Officer	1.06 (0.39,2.90)	0.911
		Enlisted Flyer	6.41 (0.74,55.13)	0.091
		Enlisted Groundcrew	0.37 (0.08,1.76)	0.210
16-29	Estradiol	All	0.95 (0.78,1.16)	0.619
		Officer	0.78 (0.56,1.07)	0.120
		Enlisted Flyer	0.89 (0.56,1.42)	0.616
		Enlisted Groundcrew	1.16 (0.87,1.55)	0.312
16-31	LH	All	1.02 (0.70,1.50)	0.907
		Officer	1.24 (0.70,2.20)	0.458
		Enlisted Flyer	0.86 (0.29,2.55)	0.782
		Enlisted Groundcrew	0.88 (0.49,1.59)	0.674
16-33	FSH	All	1.04 (0.75,1.45)	0.794
		Officer	1.18 (0.74,1.85)	0.488
		Enlisted Flyer	1.49 (0.70,3.17)	0.297
		Enlisted Groundcrew	0.68 (0.37,1.26)	0.221

**Table G-17. Summary of Adjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Adj. Relative Risk (95% C.I.)	p-Value
17-14	ANA Test	All	1.01 (0.84,1.20)	0.946
		Officer	0.95 (0.72,1.27)	0.736
		Enlisted Flyer	1.07 (0.68,1.67)	0.778
		Enlisted Groundcrew	1.04 (0.79,1.36)	0.801
17-15	Thyroid Microsomal Antibody	All	1.02 (0.59,1.75)	0.947
		Officer	1.14 (0.51,2.55)	0.750
		Enlisted Flyer	0.75 (0.17,3.19)	0.692
		Enlisted Groundcrew	1.00 (0.43,2.35)	0.994
17-16	MSK Smooth Muscle Antibody	All	0.99 (0.75,1.31)	0.953
		Officer	1.30 (0.84,2.03)	0.239
		Enlisted Flyer	0.48 (0.24,0.99)	0.045
		Enlisted Groundcrew	1.02 (0.68,1.53)	0.934
17-17	MSK Mitochondrial Antibody	All	2.79 (0.51,15.31)	0.222
		Officer	6.58 (0.70,61.53)	0.098
		Enlisted Flyer	--	--
		Enlisted Groundcrew	--	--
17-18	MSK Parietal Antibody	All	1.00 (0.64,1.56)	0.996
		Officer	1.36 (0.65,2.87)	0.416
		Enlisted Flyer	0.58 (0.19,1.74)	0.331
		Enlisted Groundcrew	0.97 (0.51,1.85)	0.920
17-19	Rheumatoid Factor	All	0.91 (0.69,1.22)	0.540
		Officer	1.09 (0.71,1.68)	0.692
		Enlisted Flyer	0.98 (0.51,1.91)	0.956
		Enlisted Groundcrew	0.71 (0.44,1.15)	0.167
18-3	Asthma	All	1.36 (0.87,2.10)	0.175
		Officer	1.48 (0.74,2.94)	0.266
		Enlisted Flyer	0.45 (0.12,1.74)	0.247
		Enlisted Groundcrew	1.69 (0.89,3.21)	0.111
18-4	Bronchitis	All	1.15 (0.92,1.43)	0.213
		Officer	1.02 (0.70,1.47)	0.936
		Enlisted Flyer	1.61 (0.95,2.71)	0.075
		Enlisted Groundcrew	1.11 (0.81,1.54)	0.514
18-5	Pneumonia	All	0.87 (0.66,1.16)	0.354
		Officer	0.74 (0.47,1.16)	0.185
		Enlisted Flyer	1.75 (0.85,3.61)	0.126
		Enlisted Groundcrew	0.79 (0.50,1.24)	0.304

**Table G-17. Summary of Adjusted Results for Dichotomous Variables – Model 1
(Ranch Hands vs. Comparisons) (Continued)**

Table Ref.	Clinical Parameter	Occupational Category	Adj. Relative Risk (95% C.I.)	p-Value
18-6	Thorax and Lung Abnormalities	All	0.97 (0.71,1.31)	0.821
		Officer	1.57 (0.90,2.71)	0.110
		Enlisted Flyer	0.99 (0.53,1.85)	0.978
		Enlisted Groundcrew	0.69 (0.44,1.09)	0.115
18-7	X-ray Interpretation	All	1.23 (0.92,1.64)	0.158
		Officer	1.39 (0.87,2.20)	0.167
		Enlisted Flyer	1.16 (0.56,2.39)	0.685
		Enlisted Groundcrew	1.14 (0.75,1.73)	0.554

--: Relative risk, confidence interval, and p-value are not presented because of the sparse number of participants with abnormalities.

Table G-18. Summary of Adjusted Results for Dichotomous Variables – Model 2 (Ranch Hands: Log₂ (Initial Dioxin))

Table Ref.	Clinical Parameter	Adj. Relative Risk (95% C.I.)	p-Value
9-3	Self-perception of Health	0.98 (0.79,1.21)	0.832
9-4	Appearance of Illness or Distress	0.65 (0.36,1.15)	0.117
9-5	Relative Age Appearance	1.01 (0.77,1.31)	0.962
9-7	Body Fat	1.00 (0.85,1.19)	0.986
9-9	Erythrocyte Sedimentation Rate	1.23 (0.94,1.62)	0.138
10-3	Skin Neoplasms	0.81 (0.68,0.98)	0.028
10-4	Malignant Skin Neoplasms	0.87 (0.68,1.12)	0.287
10-5	Benign Skin Neoplasms	0.79 (0.64,0.97)	0.020
10-6	Skin Neoplasms of Uncertain Behavior or Unspecified Nature	0.88 (0.42,1.85)	0.732
10-7	Basal Cell Carcinoma (All Sites Combined)	0.70 (0.53,0.94)	0.014
10-8	Basal Cell Carcinoma (Ear, Face, Head, and Neck)	0.62 (0.44,0.87)	0.003
10-9	Basal Cell Carcinoma (Trunk)	1.18 (0.75,1.86)	0.470
10-10	Basal Cell Carcinoma (Upper Extremities)	0.56 (0.21,1.51)	0.219
10-11	Basal Cell Carcinoma (Lower Extremities)	1.46 (0.50,4.26)	0.511
10-12	Squamous Cell Carcinoma	0.98 (0.52,1.85)	0.944
10-13	Nonmelanoma	0.79 (0.60,1.03)	0.075
10-14	Melanoma	1.28 (0.76,2.16)	0.366
10-15	Systemic Neoplasms (All Sites Combined)	1.00 (0.84,1.20)	0.980
10-16	Malignant Systemic Neoplasms	0.82 (0.57,1.18)	0.272
10-17	Benign Systemic Neoplasms	0.99 (0.82,1.19)	0.903
10-18	Systemic Neoplasms of Uncertain Behavior or Unspecified Nature	1.16 (0.58,2.31)	0.678
10-19	Malignant Systemic Neoplasms (Eye, Ear, Face, Head, and Neck)	0.79 (0.27,2.33)	0.666
10-20	Malignant Systemic Neoplasms (Oral Cavity, Pharynx, and Larynx)	1.15 (0.34,3.88)	0.822
10-21	Malignant Systemic Neoplasms (Thymus, Heart, and Mediastinum)	--	--
10-22	Malignant Systemic Neoplasms (Thyroid Gland)	0.12 (0.01,2.84)	0.059
10-23	Malignant Systemic Neoplasms (Bronchus and Lung)	0.53 (0.21,1.34)	0.144
10-24	Malignant Systemic Neoplasms (Liver)	2.06 (0.82,5.15)	0.140
10-25	Malignant Systemic Neoplasms (Colon and Rectum)	0.93 (0.42,2.07)	0.855
10-26	Malignant Systemic Neoplasms (Kidney and Bladder)	1.05 (0.47,2.38)	0.899
10-27	Malignant Systemic Neoplasms (Prostate)	0.68 (0.33,1.37)	0.254
10-28	Malignant Systemic Neoplasms (Testicles)	0.77 (0.22,2.64)	0.663
10-29	Malignant Systemic Neoplasms (Connective and Other Soft Tissues)	2.39 (0.68,8.37)	0.179
10-30	Hodgkin's Disease	--	--
10-31	Non-Hodgkin's Lymphoma	--	--
10-32	Other Malignant Systemic Neoplasms of Lymphoid and Histiocytic Tissue	--	--
10-33	All Malignant Skin and Systemic Neoplasms	0.91 (0.72,1.14)	0.396
10-34	All Skin and Systemic Neoplasms	0.90 (0.76,1.07)	0.244
10-36	PSA	0.61 (0.40,0.93)	0.014
11-3	Inflammatory Diseases	0.98 (0.45,2.17)	0.964
11-4	Hereditary and Degenerative Disorders	1.02 (0.76,1.36)	0.909
11-5	Peripheral Disorders	1.09 (0.90,1.32)	0.400
11-6	Other Neurological Disorders	0.99 (0.81,1.20)	0.922
11-7	Smell	0.83 (0.46,1.50)	0.534
11-8	Visual Fields	4.37 (0.84,22.64)	0.049
11-9	Light Reaction	--	--

**Table G-18. Summary of Adjusted Results for Dichotomous Variables – Model 2
(Ranch Hands: Log₂ (Initial Dioxin)) (Continued)**

Table Ref.	Clinical Parameter	Adj. Relative Risk (95% C.I.)	p-Value
11-10	Ocular Movement	0.74 (0.40,1.36)	0.318
11-11	Facial Sensation	0.55 (0.06,5.38)	0.553
11-12	Jaw Clench	0.59 (0.08,4.24)	0.562
11-13	Smile	1.50 (0.75,3.02)	0.274
11-14	Palpebral Fissure	1.25 (0.54,2.93)	0.613
11-15	Balance	1.65 (0.61,4.45)	0.350
11-16	Speech	0.19 (0.02,2.32)	0.078
11-17	Tongue Position Relative to Midline	0.59 (0.08,4.24)	0.562
11-18	Palate and Uvula Movement	0.59 (0.08,4.24)	0.562
11-19	Cranial Nerve Index	0.75 (0.53,1.08)	0.110
11-20	Neck Range of Motion	0.91 (0.74,1.13)	0.411
11-21	Pinprick	1.29 (0.92,1.81)	0.134
11-22	Light Touch	1.01 (0.65,1.59)	0.956
11-23	Muscle Status	0.95 (0.64,1.41)	0.792
11-24	Patellar Reflex	1.81 (1.10,2.99)	0.019
11-25	Achilles Reflex	1.22 (0.98,1.51)	0.075
11-26	Biceps Reflex	0.87 (0.44,1.70)	0.675
11-27	Babinski Reflex	1.08 (0.34,3.42)	0.896
11-29	Polyneuropathy Prevalence Index	1.30 (1.03,1.65)	0.029
11-30	Multiple Polyneuropathy Index	1.85 (1.20,2.87)	0.004
11-31	Confirmed Polyneuropathy Indicator	1.98 (1.19,3.29)	0.008
11-32	Tremor	1.02 (0.73,1.44)	0.893
11-33	Coordination	1.18 (0.62,2.24)	0.632
11-34	Romberg Sign	1.65 (0.61,4.45)	0.350
11-35	Gait	1.12 (0.79,1.60)	0.530
11-36	CNS Index	1.03 (0.80,1.33)	0.840
12-3	Psychoses	0.82 (0.55,1.23)	0.338
12-4	Alcohol Dependence	1.04 (0.77,1.42)	0.790
12-5	Drug Dependence	--	--
12-6	Anxiety	0.91 (0.76,1.09)	0.302
12-7	Other Neuroses	0.88 (0.74,1.05)	0.164
12-8	SCL-90-R Anxiety	0.73 (0.57,0.95)	0.016
12-9	SCL-90-R Depression	0.84 (0.67,1.06)	0.138
12-10	SCL-90-R Hostility	0.94 (0.71,1.25)	0.692
12-11	SCL-90-R Interpersonal Sensitivity	0.78 (0.62,0.97)	0.026
12-12	SCL-90-R Obsessive-Compulsive Behavior	0.89 (0.17,1.11)	0.286
12-13	SCL-90-R Paranoid Ideation	0.88 (0.66,1.17)	0.374
12-14	SCL-90-R Phobic Anxiety	0.89 (0.70,1.12)	0.315
12-15	SCL-90-R Psychoticism	0.98 (0.78,1.22)	0.838
12-16	SCL-90-R Somatization	0.76 (0.62,0.94)	0.010
12-17	SCL-90-R Global Severity Index (GSI)	0.86 (0.69,1.06)	0.157
12-18	SCL-90-R Positive Symptom Total (PST)	0.82 (0.66,1.02)	0.067
12-19	SCL-90-R Positive Symptom Distress Index (PSDI)	0.80 (0.61,1.05)	0.107
13-3	Uncharacterized Hepatitis	1.02 (0.58,1.79)	0.936
13-4	Jaundice	1.01 (0.20,5.08)	0.995
13-5	Chronic Liver Disease and Cirrhosis (Alcohol-related)	1.06 (0.72,1.57)	0.765
13-6	Chronic Liver Disease and Cirrhosis (Non-alcohol-related)	1.04 (0.61,1.76)	0.897
13-7	Liver Abscess and Sequelae of Chronic Liver Disease	2.09 (0.61,7.19)	0.277
13-8	Enlarged Liver (Hepatomegaly)	0.91 (0.46,1.80)	0.790

**Table G-18. Summary of Adjusted Results for Dichotomous Variables – Model 2
(Ranch Hands: Log₂ (Initial Dioxin)) (Continued)**

Table Ref.	Clinical Parameter	Adj. Relative Risk (95% C.I.)	p-Value
13-9	Other Liver Disorders	1.23 (1.03,1.47)	0.022
13-10	Current Hepatomegaly	0.66 (0.30,1.45)	0.279
13-12	AST	1.13 (0.86,1.50)	0.380
13-14	ALT	1.32 (1.00,1.73)	0.049
13-16	GGT	1.06 (0.82,1.37)	0.669
13-18	Alkaline Phosphatase	1.04 (0.61,1.76)	0.897
13-20	Total Bilirubin	0.75 (0.46,1.13)	0.154
13-21	Direct Bilirubin	--	--
13-23	Lactic Dehydrogenase	0.98 (0.74,1.30)	0.889
13-25	Cholesterol	1.23 (0.99,1.52)	0.062
13-27	HDL Cholesterol	0.72 (0.53,0.98)	0.029
13-29	Cholesterol-HDL Ratio	1.08 (0.91,1.28)	0.378
13-31	Triglycerides	0.96 (0.80,1.15)	0.690
13-33	Creatine Phosphokinase	1.09 (0.82,1.45)	0.542
13-35	Serum Amylase	1.04 (0.63,1.71)	0.884
13-36	Antibodies for Hepatitis A	1.02 (0.86,1.22)	0.813
13-37	Evidence of Prior Hepatitis B	0.95 (0.74,1.22)	0.669
13-38	Current Hepatitis B	0.39 (0.02,9.42)	0.497
13-39	Antibodies for Hepatitis C	0.63 (0.23,1.75)	0.344
13-40	Stool Hemoccult	0.97 (0.62,1.51)	0.880
13-42	Prealbumin	1.76 (0.94,3.30)	0.081
13-44	Albumin	--	--
13-46	α-1-Acid Glycoprotein	0.92 (0.63,1.35)	0.684
13-50	α-2-Macroglobulin	1.48 (0.96,2.27)	0.072
13-52	Apolipoprotein B	1.06 (0.90,1.25)	0.456
13-54	C3 Complement	1.01 (0.39,2.62)	0.977
13-56	C4 Complement	--	--
13-58	Haptoglobin	0.98 (0.82,1.16)	0.785
13-60	Transferrin	0.93 (0.69,1.24)	0.615
14-3	Essential Hypertension	1.10 (0.91,1.32)	0.314
14-4	Heart Disease (Excluding Essential Hypertension)	0.90 (0.75,1.08)	0.249
14-5	Myocardial Infarction	1.30 (0.95,1.77)	0.106
14-6	Stroke or Transient Ischemia Attack	1.33 (0.72,2.47)	0.379
14-8	Systolic Blood Pressure	0.89 (0.71,1.11)	0.296
14-10	Diastolic Blood Pressure	1.15 (0.80,1.67)	0.446
14-11	Heart Sounds	1.28 (0.83,1.98)	0.266
14-12	Overall Electrocardiograph	1.14 (0.93,1.39)	0.200
14-13	Right Bundle Branch Block	1.12 (0.62,2.04)	0.707
14-14	Left Bundle Branch Block	--	--
14-15	Non-Specific ST- and T-Wave Changes	1.15 (0.91,1.44)	0.237
14-16	Bradycardia	0.98 (0.44,2.22)	0.971
14-17	Tachycardia	--	--
14-18	Arrhythmia	1.00 (0.68,1.48)	0.981
14-19	Evidence of Prior Myocardial Infarction	1.84 (1.13,2.99)	0.012
14-20	ECG: Other Diagnoses	--	--
14-21	Funduscopic Examination	1.14 (0.87,1.50)	0.342
14-22	Carotid Bruits	1.15 (0.62,2.11)	0.658
14-23	Radial Pulses	--	--
14-24	Femoral Pulses	1.17 (0.61,2.24)	0.641

**Table G-18. Summary of Adjusted Results for Dichotomous Variables – Model 2
(Ranch Hands: Log₂ (Initial Dioxin)) (Continued)**

Table Ref.	Clinical Parameter	Adj. Relative Risk (95% C.I.)	p-Value
14-25	Popliteal Pulses	0.97 (0.53,1.78)	0.924
14-26	Dorsalis Pedis Pulses	1.11 (0.78,1.57)	0.561
14-27	Posterior Tibial Pulses	1.16 (0.81,1.65)	0.417
14-28	Leg Pulses	1.13 (0.84,1.51)	0.433
14-29	Peripheral Pulses	1.06 (0.79,1.41)	0.718
14-30	ICVI Index	1.12 (0.73,1.72)	0.604
15-14	Prothrombin Time	0.72 (0.28,1.85)	0.470
15-15	RBC Morphology	1.02 (0.76,1.38)	0.878
15-18	Absolute Neutrophils (bands) (Zero vs. Nonzero)	0.87 (0.70,1.09)	0.214
15-22	Absolute Eosinophils (Zero vs. Nonzero)	0.92 (0.73,1.18)	0.521
15-24	Absolute Basophils (Zero vs. Nonzero)	0.81 (0.68,0.95)	0.012
16-3	Past Thyroid Disease	1.20 (0.88,1.64)	0.245
16-4	Composite Diabetes Indicator	1.36 (1.09,1.69)	0.005
16-7	Thyroid Gland	1.01 (0.32,3.17)	0.981
16-8	Testicular Examination	1.08 (0.72,1.61)	0.714
16-12	Thyroxine	1.51 (0.87,2.62)	0.143
16-13	Anti-Thyroid Antibodies	1.01 (0.31,3.23)	0.990
16-15	Fasting Glucose	1.31 (1.06,1.62)	0.013
16-17	2-Hour Postprandial Glucose	0.99 (0.76,1.29)	0.940
16-18	Fasting Urinary Glucose	1.27 (0.90,1.79)	0.173
16-19	2-Hour Postprandial Urinary Glucose	0.94 (0.75,1.17)	0.585
16-23	α-1-C Hemoglobin	1.53 (1.19,1.96)	0.001
16-25	Total Testosterone	1.16 (0.87,1.55)	0.307
16-27	Free Testosterone	0.41 (0.14,1.18)	0.051
16-29	Estradiol	1.12 (0.94,1.33)	0.213
16-31	LH	0.97 (0.65,1.43)	0.873
16-33	FSH	1.11 (0.81,1.53)	0.508
17-14	ANA Test	1.04 (0.88,1.24)	0.622
17-15	ANA Thyroid Microsomal Antibody	0.77 (0.43,1.35)	0.344
17-16	MSK Smooth Muscle Antibody	0.77 (0.58,1.04)	0.082
17-17	MSK Mitochondrial Antibody	0.10 (0.01,4.01)	0.049
17-18	MSK Parietal Antibody	0.93 (0.64,1.35)	0.694
17-19	Rheumatoid Factor	0.83 (0.60,1.14)	0.233
18-3	Asthma	1.22 (0.82,1.82)	0.328
18-4	Bronchitis	1.07 (0.88,1.30)	0.510
18-5	Pneumonia	0.85 (0.63,1.14)	0.274
18-6	Thorax and Lung Abnormalities	1.14 (0.86,1.51)	0.366
18-7	X-ray Interpretation	0.95 (0.71,1.27)	0.730

--: Relative risk, confidence interval, and p-value are not presented because of the sparse number of Ranch Hands with abnormalities.

Note: Relative risk for a twofold increase in initial dioxin.

Table G-19. Summary of Adjusted Results for Dichotomous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category)

Table Ref.	Clinical Parameter	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
9-3	Self-perception of Health	Comparison	1,211		
		Background RH	376	1.13 (0.75,1.72)	0.555
		Low RH	237	1.62 (1.08,2.44)	0.020
		High RH	240	1.86 (1.26,2.74)	0.002
		Low plus High RH	477	1.74 (1.27,2.37)	0.001
9-4	Appearance of Illness or Distress	Comparison	1,211		
		Background RH	378	0.76 (0.21,2.80)	0.684
		Low RH	237	2.31 (0.87,6.11)	0.092
		High RH	241	1.67 (0.54,5.19)	0.372
		Low plus High RH	478	1.96 (0.84,4.58)	0.118
9-5	Relative Age Appearance	Comparison	1,211		
		Background RH	378	1.42 (0.93,2.16)	0.102
		Low RH	237	1.11 (0.67,1.82)	0.691
		High RH	241	1.05 (0.65,1.69)	0.857
		Low plus High RH	478	1.08 (0.74,1.57)	0.706
9-7	Body Fat	Comparison	1,211		
		Background RH	378	0.60 (0.45,0.80)	0.001
		Low RH	237	1.31 (0.97,1.77)	0.073
		High RH	241	1.12 (0.83,1.53)	0.451
		Low plus High RH	478	1.21 (0.97,1.53)	0.097
9-9	Erythrocyte Sedimentation Rate	Comparison	1,211		
		Background RH	376	1.07 (0.66,1.73)	0.777
		Low RH	237	1.04 (0.61,1.75)	0.897
		High RH	240	1.36 (0.82,2.26)	0.237
		Low plus High RH	477	1.19 (0.80,1.77)	0.398
10-3	Skin Neoplasms	Comparison	1,131		
		Background RH	358	1.46 (1.13,1.88)	0.004
		Low RH	210	1.49 (1.10,2.04)	0.011
		High RH	229	1.05 (0.76,1.45)	0.747
		Low plus High RH	439	1.25 (0.98,1.58)	0.073
10-4	Malignant Skin Neoplasms	Comparison	1,131		
		Background RH	358	1.13 (0.81,1.58)	0.476
		Low RH	210	1.45 (0.98,2.14)	0.062
		High RH	229	1.19 (0.76,1.85)	0.453
		Low plus High RH	439	1.30 (0.95,1.80)	0.104
10-5	Benign Skin Neoplasms	Comparison	1,200		
		Background RH	377	1.64 (1.25,2.15)	<0.001
		Low RH	233	1.21 (0.87,1.69)	0.265
		High RH	242	0.95 (0.67,1.36)	0.798
		Low plus High RH	475	1.07 (0.82,1.39)	0.603

**Table G-19. Summary of Adjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
10-6	Skin Neoplasms of Uncertain Behavior or Unspecified Nature	Comparison	1,131		
		Background RH	358	0.92 (0.18,4.75)	0.921
		Low RH	210	1.91 (0.47,7.69)	0.363
		High RH	229	0.89 (0.18,4.41)	0.889
		Low plus High RH	439	1.28 (0.40,4.14)	0.675
10-7	Basal Cell Carcinoma (All Sites Combined)	Comparison	1,131		
		Background RH	358	1.16 (0.81,1.65)	0.427
		Low RH	210	1.59 (1.06,2.39)	0.026
		High RH	229	0.99 (0.60,1.64)	0.979
		Low plus High RH	439	1.24 (0.88,1.77)	0.223
10-8	Basal Cell Carcinoma (Ear, Face, Head, and Neck)	Comparison	1,131		
		Background RH	358	1.19 (0.80,1.77)	0.386
		Low RH	210	1.54 (0.98,2.42)	0.061
		High RH	229	0.95 (0.54,1.67)	0.846
		Low plus High RH	439	1.19 (0.80,1.77)	0.379
10-9	Basal Cell Carcinoma (Trunk)	Comparison	1,131		
		Background RH	358	0.99 (0.55,1.79)	0.984
		Low RH	210	1.60 (0.83,3.11)	0.161
		High RH	229	1.46 (0.63,3.36)	0.374
		Low plus High RH	439	1.53 (0.85,2.73)	0.153
10-10	Basal Cell Carcinoma (Upper Extremities)	Comparison	1,131		
		Background RH	358	0.74 (0.36,1.52)	0.416
		Low RH	210	0.93 (0.39,2.21)	0.876
		High RH	229	0.64 (0.18,2.23)	0.484
		Low plus High RH	439	0.77 (0.34,1.71)	0.518
10-11	Basal Cell Carcinoma (Lower Extremities)	Comparison	1,131		
		Background RH	358	1.89 (0.43,8.34)	0.398
		Low RH	210	0.90 (0.10,8.17)	0.928
		High RH	229	1.03 (0.12,9.27)	0.976
		Low plus High RH	439	0.97 (0.18,5.16)	0.971
10-12	Squamous Cell Carcinoma	Comparison	1,131		
		Background RH	358	1.53 (0.68,3.45)	0.306
		Low RH	210	1.52 (0.56,4.10)	0.408
		High RH	229	1.74 (0.53,5.69)	0.363
		Low plus High RH	439	1.63 (0.69,3.82)	0.262
10-13	Nonmelanoma	Comparison	1,131		
		Background RH	358	1.16 (0.82,1.64)	0.398
		Low RH	210	1.43 (0.96,2.13)	0.081
		High RH	229	1.06 (0.67,1.69)	0.803
		Low plus High RH	439	1.22 (0.88,1.71)	0.235
10-14	Melanoma	Comparison	1,131		
		Background RH	358	1.56 (0.59,4.16)	0.373
		Low RH	210	2.17 (0.73,6.48)	0.164
		High RH	229	2.71 (0.76,9.67)	0.124
		Low plus High RH	439	2.44 (0.96,6.23)	0.062

**Table G-19. Summary of Adjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
10-15	Systemic Neoplasms (All Sites Combined)	Comparison	1,202		
		Background RH	373	0.76 (0.57,1.03)	0.076
		Low RH	230	0.98 (0.70,1.38)	0.927
		High RH	239	0.95 (0.67,1.36)	0.794
		Low plus High RH	469	0.97 (0.73,1.28)	0.823
10-16	Malignant Systemic Neoplasms	Comparison	1,209		
		Background RH	375	0.73 (0.42,1.29)	0.279
		Low RH	232	1.94 (1.16,3.24)	0.012
		High RH	240	0.86 (0.41,1.78)	0.680
		Low plus High RH	472	1.28 (0.77,2.13)	0.345
10-17	Benign Systemic Neoplasms	Comparison	1,202		
		Background RH	373	0.89 (0.66,1.22)	0.479
		Low RH	230	0.86 (0.60,1.23)	0.400
		High RH	239	1.00 (0.69,1.45)	0.996
		Low plus High RH	469	0.93 (0.69,1.24)	0.613
10-18	Systemic Neoplasms of Uncertain Behavior or Unspecified Nature	Comparison	1,209		
		Background RH	375	0.72 (0.30,1.76)	0.475
		Low RH	232	0.85 (0.32,2.26)	0.744
		High RH	240	0.40 (0.09,1.89)	0.250
		Low plus High RH	472	0.58 (0.22,1.58)	0.288
10-19	Malignant Systemic Neoplasms (Eye, Ear, Face, Head, and Neck)	Comparison	1,209		
		Background RH	375	0.64 (0.16,2.59)	0.533
		Low RH	232	1.94 (0.58,6.44)	0.281
		High RH	240	0.49 (0.06,4.31)	0.520
		Low plus High RH	472	0.96 (0.24,3.82)	0.956
10-20	Malignant Systemic Neoplasms (Oral Cavity, Pharynx, and Larynx)	Comparison	1,209		
		Background RH	375	0.39 (0.04,3.56)	0.401
		Low RH	232	1.01 (0.18,5.59)	0.987
		High RH	240	0.56 (0.06,5.33)	0.614
		Low plus High RH	472	0.75 (0.16,3.59)	0.719
10-21	Malignant Systemic Neoplasms (Thymus, Heart, and Mediastinum)	Comparison		--	--
		Background RH		--	--
		Low RH		--	--
		High RH		--	--
		Low plus High RH		--	--
10-22	Malignant Systemic Neoplasms (Thyroid Gland)	Comparison	1,209		
		Background RH	375	--	--
		Low RH	232	5.18 (0.71,37.60)	0.104
		High RH	240	--	--
		Low plus High RH	472	--	--
10-23	Malignant Systemic Neoplasms (Bronchus and Lung)	Comparison	1,209		
		Background RH	375	1.52 (0.21,11.09)	0.678
		Low RH	232	8.67 (1.74,43.23)	0.008
		High RH	240	--	--
		Low plus High RH	472	--	--

**Table G-19. Summary of Adjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
10-24	Malignant Systemic Neoplasms (Liver)	Comparison	1,209		
		Background RH	375	--	--
		Low RH	232	--	--
		High RH	240	7.06 (0.70,71.25)	0.098
		Low plus High RH	472	--	--
10-25	Malignant Systemic Neoplasms (Colon and Rectum)	Comparison	1,209		
		Background RH	375	0.60 (0.06,5.76)	0.658
		Low RH	232	3.28 (0.77,13.90)	0.107
		High RH	240	0.57 (0.05,5.85)	0.632
		Low plus High RH	472	1.34 (0.27,6.56)	0.717
10-26	Malignant Systemic Neoplasms (Kidney and Bladder)	Comparison	1,209		
		Background RH	375	2.26 (0.49,10.35)	0.292
		Low RH	232	4.44 (1.04,18.95)	0.044
		High RH	240	3.26 (0.46,23.17)	0.237
		Low plus High RH	472	3.80 (0.88,16.46)	0.075
10-27	Malignant Systemic Neoplasms (Prostate)	Comparison	1,209		
		Background RH	375	0.48 (0.21,1.07)	0.072
		Low RH	232	0.91 (0.42,1.97)	0.818
		High RH	240	0.61 (0.19,1.93)	0.404
		Low plus High RH	472	0.75 (0.35,1.60)	0.453
10-28	Malignant Systemic Neoplasms (Testicles)	Comparison			
		Background RH		--	--
		Low RH		--	--
		High RH		--	--
		Low plus High RH		--	--
10-29	Malignant Systemic Neoplasms (Connective and Other Soft Tissues)	Comparison	1,209		
		Background RH	375	--	--
		Low RH	232	--	--
		High RH	240	3.17 (0.17,57.71)	0.436
		Low plus High RH	472	--	--
10-30	Hodgkin's Disease	Comparison	1,209		
		Background RH	375	0.55 (0.05,6.15)	0.624
		Low RH	232	--	--
		High RH	240	--	--
		Low plus High RH	472	--	--
10-31	Non-Hodgkin's Lymphoma	Comparison	1,209		
		Background RH	375	0.24 (0.01,4.90)	0.351
		Low RH	232	--	--
		High RH	240	--	--
		Low plus High RH	472	--	--
10-32	Other Malignant Systemic Neoplasms of Lymphoid and Histiocytic Tissue	Comparison	1,209		
		Background RH	375	1.90 (0.15,23.45)	0.618
		Low RH	232	--	--
		High RH	240	--	--
		Low plus High RH	472	--	--

**Table G-19. Summary of Adjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
10-33	All Malignant Skin and Systemic Neoplasms	Comparison	1,196		
		Background RH	372	0.84 (0.60,1.20)	0.339
		Low RH	226	1.51 (1.03,2.21)	0.035
		High RH	239	1.01 (0.66,1.57)	0.952
		Low plus High RH	465	1.23 (0.88,1.71)	0.221
10-34	All Skin and Systemic Neoplasms	Comparison	1,189		
		Background RH	371	1.01 (0.76,1.33)	0.956
		Low RH	225	1.15 (0.83,1.61)	0.396
		High RH	238	0.93 (0.67,1.30)	0.684
		Low plus High RH	463	1.04 (0.79,1.35)	0.799
10-36	PSA	Comparison	1,151		
		Background RH	362	0.76 (0.43,1.37)	0.368
		Low RH	221	1.42 (0.79,2.56)	0.246
		High RH	234	1.04 (0.51,2.16)	0.907
		Low plus High RH	455	1.21 (0.71,2.08)	0.484
11-3	Inflammatory Diseases	Comparison	1,203		
		Background RH	377	13.28 (1.31,135.01)	0.029
		Low RH	238	13.85 (1.20,160.07)	0.035
		High RH	238	12.43 (1.03,149.42)	0.047
		Low plus High RH	476	13.12 (1.39,123.67)	0.024
11-4	Hereditary and Degenerative Diseases	Comparison	1,193		
		Background RH	375	1.16 (0.77,1.76)	0.474
		Low RH	235	0.92 (0.56,1.52)	0.736
		High RH	236	1.01 (0.61,1.67)	0.979
		Low plus High RH	471	0.96 (0.65,1.41)	0.841
11-5	Peripheral Disorders	Comparison	1,191		
		Background RH	372	0.88 (0.64,1.21)	0.437
		Low RH	235	1.25 (0.89,1.76)	0.190
		High RH	236	1.33 (0.94,1.90)	0.111
		Low plus High RH	471	1.29 (0.99,1.69)	0.059
11-6	Other Neurological Disorders	Comparison	1,188		
		Background RH	372	1.21 (0.85,1.73)	0.281
		Low RH	235	1.31 (0.90,1.89)	0.161
		High RH	235	1.23 (0.85,1.77)	0.271
		Low plus High RH	470	1.27 (0.95,1.69)	0.106
11-7	Smell	Comparison	1,191		
		Background RH	373	1.04 (0.40,2.73)	0.929
		Low RH	234	1.57 (0.61,4.06)	0.353
		High RH	235	0.82 (0.23,2.92)	0.758
		Low plus High RH	469	1.13 (0.48,2.68)	0.777
11-8	Visual Fields	Comparison	1,189		
		Background RH	375	0.86 (0.10,7.83)	0.897
		Low RH	235	--	--
		High RH	236	0.57 (0.06,5.52)	0.629
		Low plus High RH	471	--	--

**Table G-19. Summary of Adjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
11-9	Light Reaction	Comparison	1,191		
		Background RH	371	0.38 (0.05,3.03)	0.359
		Low RH	235	--	--
		High RH	235	--	--
		Low plus High RH	470	--	--
11-10	Ocular Movement	Comparison	1,193		
		Background RH	375	1.18 (0.37,3.73)	0.781
		Low RH	235	1.76 (0.61,5.07)	0.291
		High RH	236	1.32 (0.45,3.83)	0.614
		Low plus High RH	471	1.52 (0.65,3.55)	0.328
11-11	Facial Sensation	Comparison	1,209		
		Background RH	376	1.70 (0.14,19.96)	0.672
		Low RH	238	2.04 (0.18,23.31)	0.564
		High RH	238	--	--
		Low plus High RH	476	--	--
11-12	Jaw Clench	Comparison			
		Background RH		--	--
		Low RH		--	--
		High RH		--	--
		Low plus High RH		--	--
11-13	Smile	Comparison	1,210		
		Background RH	377	3.14 (0.65,15.08)	0.152
		Low RH	238	2.38 (0.42,13.43)	0.326
		High RH	238	1.80 (0.30,10.67)	0.517
		Low plus High RH	476	2.07 (0.50,8.57)	0.315
11-14	Palpebral Fissure	Comparison	1,210		
		Background RH	377	0.96 (0.26,3.60)	0.955
		Low RH	238	0.79 (0.17,3.64)	0.761
		High RH	238	0.35 (0.04,2.84)	0.324
		Low plus High RH	476	0.52 (0.13,2.05)	0.352
11-15	Balance	Comparison	1,192		
		Background RH	375	2.54 (0.74,8.72)	0.138
		Low RH	235	0.63 (0.08,5.24)	0.667
		High RH	236	0.63 (0.07,5.49)	0.672
		Low plus High RH	471	0.63 (0.13,3.11)	0.567
11-16	Speech	Comparison	1,193		
		Background RH	375	1.09 (0.22,5.46)	0.919
		Low RH	235	1.38 (0.28,6.71)	0.688
		High RH	236	--	--
		Low plus High RH	471	--	--
11-17	Tongue Position Relative to Midline	Comparison			
		Background RH		--	--
		Low RH		--	--
		High RH		--	--
		Low plus High RH		--	--

**Table G-19. Summary of Adjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
11-18	Palate and Uvula Movement	Comparison			
		Background RH		--	--
		Low RH		--	--
		High RH		--	--
		Low plus High RH		--	--
11-19	Cranial Nerve Index	Comparison	1,189		
		Background RH	366	1.20 (0.72,2.02)	0.484
		Low RH	232	1.29 (0.74,2.24)	0.369
		High RH	232	0.60 (0.30,1.22)	0.158
		Low plus High RH	464	0.88 (0.54,1.43)	0.604
11-20	Neck Range of Motion	Comparison	1,193		
		Background RH	375	1.12 (0.80,1.57)	0.523
		Low RH	235	1.60 (1.12,2.29)	0.010
		High RH	236	1.55 (1.05,2.29)	0.028
		Low plus High RH	471	1.57 (1.18,2.11)	0.002
11-21	Pinprick	Comparison	1,132		
		Background RH	357	1.11 (0.63,1.95)	0.716
		Low RH	222	0.95 (0.51,1.77)	0.868
		High RH	223	1.55 (0.88,2.73)	0.126
		Low plus High RH	445	1.21 (0.77,1.93)	0.410
11-22	Light Touch	Comparison	1,132		
		Background RH	357	1.07 (0.54,2.10)	0.852
		Low RH	222	1.12 (0.55,2.27)	0.751
		High RH	223	1.09 (0.53,2.26)	0.808
		Low plus High RH	445	1.11 (0.64,1.93)	0.718
11-23	Muscle Status	Comparison	1,192		
		Background RH	375	1.22 (0.63,2.35)	0.550
		Low RH	235	1.90 (0.98,3.66)	0.056
		High RH	236	1.58 (0.73,3.39)	0.242
		Low plus High RH	471	1.73 (0.99,3.04)	0.056
11-24	Patellar Reflex	Comparison	1,191		
		Background RH	375	0.88 (0.40,1.91)	0.742
		Low RH	234	0.86 (0.37,2.02)	0.737
		High RH	236	1.39 (0.60,3.26)	0.446
		Low plus High RH	470	1.10 (0.57,2.10)	0.778
11-25	Achilles Reflex	Comparison	1,188		
		Background RH	374	0.96 (0.68,1.35)	0.811
		Low RH	235	0.97 (0.66,1.42)	0.880
		High RH	236	1.32 (0.89,1.95)	0.168
		Low plus High RH	471	1.13 (0.84,1.52)	0.416
11-26	Biceps Reflex	Comparison	1,192		
		Background RH	375	0.27 (0.03,2.13)	0.213
		Low RH	235	2.52 (0.95,6.70)	0.064
		High RH	236	1.37 (0.35,5.29)	0.651
		Low plus High RH	471	1.85 (0.73,4.69)	0.193

**Table G-19. Summary of Adjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
11-27	Babinski Reflex	Comparison	1,190		
		Background RH	375	1.53 (0.45,5.14)	0.496
		Low RH	235	0.38 (0.05,3.05)	0.364
		High RH	236	0.41 (0.05,3.33)	0.405
		Low plus High RH	471	0.40 (0.08,1.85)	0.239
11-29	Polyneuropathy Prevalence Index	Comparison	1,130		
		Background RH	356	0.83 (0.57,1.20)	0.315
		Low RH	222	0.86 (0.57,1.30)	0.484
		High RH	223	1.31 (0.86,1.98)	0.206
		Low plus High RH	445	1.06 (0.77,1.46)	0.708
11-30	Multiple Polyneuropathy Index	Comparison	1,130		
		Background RH	356	1.37 (0.69,2.72)	0.366
		Low RH	222	0.96 (0.44,2.10)	0.914
		High RH	223	2.38 (1.18,4.82)	0.016
		Low plus High RH	445	1.51 (0.84,2.71)	0.165
11-31	Confirmed Polyneuropathy Indicator	Comparison	1,138		
		Background RH	355	0.99 (0.20,4.97)	0.988
		Low RH	223	1.56 (0.38,6.40)	0.536
		High RH	221	6.04 (1.63,22.42)	0.007
		Low plus High RH	444	3.06 (1.02,9.23)	0.047
11-32	Tremor	Comparison	1,193		
		Background RH	375	1.11 (0.71,1.74)	0.659
		Low RH	235	0.71 (0.39,1.28)	0.248
		High RH	236	0.79 (0.44,1.40)	0.420
		Low plus High RH	471	0.75 (0.48,1.16)	0.194
11-33	Coordination	Comparison	1,191		
		Background RH	375	1.46 (0.71,3.01)	0.298
		Low RH	235	0.61 (0.21,1.79)	0.371
		High RH	236	0.42 (0.12,1.42)	0.161
		Low plus High RH	471	0.51 (0.22,1.19)	0.117
11-34	Romberg Sign	Comparison	1,192		
		Background RH	375	2.54 (0.74,8.72)	0.138
		Low RH	235	0.63 (0.08,5.24)	0.667
		High RH	236	0.63 (0.07,5.49)	0.672
		Low plus High RH	471	0.63 (0.13,3.11)	0.567
11-35	Gait	Comparison	1,193		
		Background RH	375	1.52 (0.90,2.59)	0.121
		Low RH	235	0.77 (0.38,1.57)	0.479
		High RH	236	1.44 (0.76,2.74)	0.262
		Low plus High RH	471	1.06 (0.63,1.78)	0.832
11-36	CNS Index	Comparison	1,192		
		Background RH	375	1.24 (0.86,1.77)	0.249
		Low RH	235	0.67 (0.42,1.09)	0.105
		High RH	236	0.94 (0.60,1.47)	0.789
		Low plus High RH	471	0.80 (0.56,1.13)	0.205

**Table G-19. Summary of Adjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
12-3	Psychoses	Comparison	1,196		
		Background RH	376	0.85 (0.41,1.73)	0.648
		Low RH	236	1.42 (0.73,2.77)	0.297
		High RH	236	0.90 (0.45,1.80)	0.759
		Low plus High RH	472	1.13 (0.67,1.91)	0.647
12-4	Alcohol Dependence	Comparison	1,196		
		Background RH	376	1.04 (0.63,1.69)	0.888
		Low RH	237	1.11 (0.64,1.91)	0.714
		High RH	238	1.01 (0.58,1.73)	0.985
		Low plus High RH	475	1.05 (0.69,1.60)	0.802
12-5	Drug Dependence	Comparison	1,196		
		Background RH	374	1.37 (0.19,9.67)	0.755
		Low RH	236	--	--
		High RH	236	--	--
		Low plus High RH	472	--	--
12-6	Anxiety	Comparison	1,194		
		Background RH	372	0.98 (0.74,1.31)	0.902
		Low RH	235	1.17 (0.85,1.60)	0.343
		High RH	235	0.82 (0.59,1.13)	0.225
		Low plus High RH	470	0.98 (0.77,1.25)	0.857
12-7	Other Neuroses	Comparison	1,187		
		Background RH	367	0.89 (0.69,1.14)	0.368
		Low RH	234	1.37 (1.02,1.84)	0.036
		High RH	233	1.18 (0.87,1.61)	0.286
		Low plus High RH	467	1.27 (1.01,1.60)	0.038
12-8	SCL-90-R Anxiety	Comparison	1,196		
		Background RH	374	0.86 (0.55,1.35)	0.506
		Low RH	236	1.09 (0.69,1.73)	0.717
		High RH	235	0.76 (0.48,1.20)	0.237
		Low plus High RH	471	0.91 (0.64,1.29)	0.595
12-9	SCL-90-R Depression	Comparison	1,196		
		Background RH	374	0.88 (0.60,1.27)	0.485
		Low RH	236	0.78 (0.51,1.20)	0.256
		High RH	235	0.74 (0.49,1.11)	0.142
		Low plus High RH	471	0.76 (0.55,1.04)	0.087
12-10	SCL-90-R Hostility	Comparison	1,196		
		Background RH	374	0.86 (0.52,1.40)	0.536
		Low RH	236	0.80 (0.46,1.40)	0.440
		High RH	235	0.84 (0.51,1.38)	0.488
		Low plus High RH	471	0.82 (0.55,1.22)	0.333
12-11	SCL-90-R Interpersonal Sensitivity	Comparison	1,196		
		Background RH	374	0.73 (0.49,1.07)	0.110
		Low RH	236	0.92 (0.62,1.38)	0.698
		High RH	235	0.77 (0.53,1.14)	0.190
		Low plus High RH	471	0.84 (0.63,1.14)	0.270

**Table G-19. Summary of Adjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
12-12	SCL-90-R Obsessive-Compulsive Behavior	Comparison	1,196		
		Background RH	374	0.84 (0.58,1.21)	0.340
		Low RH	236	1.01 (0.68,1.50)	0.948
		High RH	235	0.72 (0.48,1.07)	0.103
		Low plus High RH	471	0.85 (0.63,1.15)	0.298
12-13	SCL-90-R Paranoid Ideation	Comparison	1,196		
		Background RH	374	0.90 (0.51,1.57)	0.702
		Low RH	236	0.87 (0.47,1.61)	0.657
		High RH	235	1.16 (0.71,1.89)	0.559
		Low plus High RH	471	1.00 (0.65,1.54)	0.990
12-14	SCL-90-R Phobic Anxiety	Comparison	1,196		
		Background RH	374	0.65 (0.40,1.06)	0.086
		Low RH	236	1.04 (0.65,1.67)	0.872
		High RH	235	1.11 (0.72,1.70)	0.647
		Low plus High RH	471	1.07 (0.76,1.52)	0.694
12-15	SCL-90-R Psychoticism	Comparison	1,196		
		Background RH	374	0.71 (0.47,1.07)	0.104
		Low RH	236	0.83 (0.53,1.28)	0.394
		High RH	235	0.95 (0.64,1.40)	0.786
		Low plus High RH	471	0.88 (0.65,1.21)	0.447
12-16	SCL-90-R Somatization	Comparison	1,196		
		Background RH	374	0.92 (0.63,1.34)	0.669
		Low RH	236	1.36 (0.93,1.97)	0.108
		High RH	235	0.92 (0.63,1.33)	0.643
		Low plus High RH	471	1.11 (0.84,1.48)	0.457
12-17	SCL-90-R Global Severity Index (GSI)	Comparison	1,196		
		Background RH	374	0.77 (0.51,1.15)	0.200
		Low RH	236	1.03 (0.69,1.55)	0.877
		High RH	235	0.93 (0.64,1.36)	0.711
		Low plus High RH	471	0.98 (0.73,1.32)	0.897
12-18	SCL-90-R Positive Symptom Total (PST)	Comparison	1,196		
		Background RH	374	0.67 (0.45,0.99)	0.045
		Low RH	236	1.04 (0.71,1.54)	0.830
		High RH	235	0.78 (0.53,1.15)	0.209
		Low plus High RH	471	0.90 (0.67,1.21)	0.496
12-19	SCL-90-R Positive Symptom Distress Index (PSDI)	Comparison	1,196		
		Background RH	374	1.16 (0.70,1.92)	0.572
		Low RH	236	1.31 (0.77,2.23)	0.325
		High RH	235	1.38 (0.85,2.23)	0.191
		Low plus High RH	471	1.34 (0.91,1.99)	0.143
13-3	Uncharacterized Hepatitis	Comparison	1,205		
		Background RH	375	1.39 (0.59,3.27)	0.450
		Low RH	236	1.00 (0.34,2.97)	0.999
		High RH	239	1.04 (0.38,2.89)	0.932
		Low plus High RH	475	1.02 (0.46,2.28)	0.957

**Table G-19. Summary of Adjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
13-4	Jaundice	Comparison	1,181		
		Background RH	367	0.99 (0.49,2.03)	0.988
		Low RH	231	--	--
		High RH	235	0.16 (0.02,1.20)	0.075
		Low plus High RH	466	--	--
13-5	Chronic Liver Disease and Cirrhosis (Alcohol-related)	Comparison	1,146		
		Background RH	358	1.03 (0.56,1.90)	0.914
		Low RH	225	0.95 (0.48,1.91)	0.894
		High RH	219	0.88 (0.43,1.81)	0.734
		Low plus High RH	444	0.92 (0.54,1.57)	0.755
13-6	Chronic Liver Disease and Cirrhosis (Non-alcohol-related)	Comparison	1,211		
		Background RH	378	1.89 (0.68,5.25)	0.223
		Low RH	238	1.15 (0.32,4.12)	0.829
		High RH	241	1.37 (0.47,4.00)	0.568
		Low plus High RH	479	1.26 (0.51,3.12)	0.625
13-7	Liver Abscess and Sequelae of Chronic Liver Disease	Comparison	1,212		
		Background RH	378	--	--
		Low RH	238	--	--
		High RH	241	7.76 (0.38,158.28)	0.183
		Low plus High RH	479	--	--
13-8	Enlarged Liver (Hepatomegaly)	Comparison	1,210		
		Background RH	378	0.80 (0.32,2.01)	0.630
		Low RH	238	0.35 (0.08,1.51)	0.159
		High RH	240	1.09 (0.42,2.79)	0.864
		Low plus High RH	478	0.62 (0.25,1.54)	0.302
13-9	Other Liver Disorders	Comparison	1,201		
		Background RH	375	1.13 (0.86,1.49)	0.371
		Low RH	237	1.05 (0.76,1.45)	0.757
		High RH	241	1.52 (1.11,2.08)	0.009
		Low plus High RH	478	1.27 (1.00,1.62)	0.055
13-10	Current Hepatomegaly	Comparison	1,193		
		Background RH	374	1.64 (0.40,6.69)	0.489
		Low RH	235	2.26 (0.57,9.01)	0.247
		High RH	239	2.62 (0.70,9.84)	0.154
		Low plus High RH	474	2.44 (0.82,7.24)	0.109
13-12	AST	Comparison	1,193		
		Background RH	374	0.70 (0.40,1.22)	0.212
		Low RH	235	1.28 (0.75,2.18)	0.360
		High RH	238	1.79 (1.08,2.96)	0.024
		Low plus High RH	473	1.51 (1.02,2.26)	0.041
13-14	ALT	Comparison	1,193		
		Background RH	374	0.71 (0.41,1.23)	0.223
		Low RH	235	1.30 (0.77,2.18)	0.323
		High RH	238	1.53 (0.95,2.45)	0.080
		Low plus High RH	473	1.41 (0.96,2.07)	0.079

**Table G-19. Summary of Adjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
13-16	GGT	Comparison	1,193		
		Background RH	374	0.77 (0.48,1.23)	0.273
		Low RH	235	1.42 (0.91,2.22)	0.127
		High RH	238	1.35 (0.86,2.11)	0.186
		Low plus High RH	473	1.38 (0.98,1.95)	0.065
13-18	Alkaline Phosphatase	Comparison	1,193		
		Background RH	375	1.85 (0.88,3.90)	0.104
		Low RH	235	0.91 (0.31,2.71)	0.871
		High RH	239	1.23 (0.44,3.41)	0.688
		Low plus High RH	474	1.06 (0.48,2.37)	0.883
13-20	Total Bilirubin	Comparison	1,193		
		Background RH	374	0.88 (0.53,1.47)	0.619
		Low RH	235	1.03 (0.58,1.84)	0.919
		High RH	238	0.59 (0.27,1.27)	0.175
		Low plus High RH	473	0.78 (0.47,1.29)	0.331
13-21	Direct Bilirubin	Comparison	1,193		
		Background RH	374	1.09 (0.12,10.31)	0.937
		Low RH	235	--	--
		High RH	238	--	--
		Low plus High RH	473	--	--
13-23	Lactic Dehydrogenase	Comparison	1,191		
		Background RH	374	1.07 (0.72,1.61)	0.729
		Low RH	235	0.80 (0.48,1.31)	0.366
		High RH	238	0.81 (0.49,1.34)	0.416
		Low plus High RH	473	0.80 (0.55,1.17)	0.255
13-25	Cholesterol	Comparison	1,193		
		Background RH	374	0.85 (0.60,1.21)	0.379
		Low RH	235	1.01 (0.68,1.51)	0.964
		High RH	238	1.41 (0.97,2.04)	0.071
		Low plus High RH	473	1.19 (0.89,1.60)	0.240
13-27	HDL Cholesterol	Comparison	1,192		
		Background RH	374	1.57 (1.00,2.45)	0.049
		Low RH	234	1.09 (0.64,1.84)	0.761
		High RH	238	0.80 (0.47,1.37)	0.416
		Low plus High RH	472	0.93 (0.62,1.40)	0.731
13-29	Cholesterol-HDL Ratio	Comparison	1,192		
		Background RH	374	1.00 (0.77,1.28)	0.982
		Low RH	234	0.83 (0.61,1.12)	0.221
		High RH	238	1.26 (0.93,1.69)	0.133
		Low plus High RH	472	1.02 (0.82,1.28)	0.849
13-31	Triglycerides	Comparison	1,193		
		Background RH	373	0.79 (0.56,1.10)	0.161
		Low RH	235	1.24 (0.88,1.76)	0.215
		High RH	238	1.55 (1.12,2.15)	0.009
		Low plus High RH	473	1.39 (1.07,1.80)	0.012

**Table G-19. Summary of Adjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
13-33	Creatine Phosphokinase	Comparison	1,193		
		Background RH	374	0.75 (0.46,1.20)	0.227
		Low RH	235	0.80 (0.47,1.35)	0.402
		High RH	238	1.20 (0.73,1.98)	0.465
		Low plus High RH	473	0.98 (0.67,1.45)	0.923
13-35	Serum Amylase	Comparison	1,193		
		Background RH	374	0.53 (0.24,1.16)	0.112
		Low RH	235	1.37 (0.67,2.77)	0.387
		High RH	238	1.02 (0.41,2.59)	0.959
		Low plus High RH	473	1.18 (0.63,2.21)	0.602
13-36	Antibodies for Hepatitis A	Comparison	1,211		
		Background RH	378	0.92 (0.70,1.21)	0.561
		Low RH	238	0.92 (0.67,1.25)	0.577
		High RH	241	0.96 (0.70,1.32)	0.787
		Low plus High RH	479	0.94 (0.74,1.19)	0.588
13-37	Evidence of Prior Hepatitis B	Comparison	1,210		
		Background RH	378	0.50 (0.31,0.80)	0.004
		Low RH	237	0.71 (0.45,1.12)	0.143
		High RH	241	0.59 (0.37,0.92)	0.021
		Low plus High RH	478	0.65 (0.46,0.91)	0.012
13-38	Current Hepatitis B	Comparison	1,212		
		Background RH	378	--	--
		Low RH	238	1.94 (0.14,26.64)	0.622
		High RH	241	--	--
		Low plus High RH	479	--	--
13-39	Antibodies for Hepatitis C	Comparison	1,212		
		Background RH	378	0.87 (0.28,2.73)	0.816
		Low RH	238	0.54 (0.12,2.40)	0.415
		High RH	241	0.50 (0.11,2.23)	0.359
		Low plus High RH	479	0.52 (0.17,1.57)	0.243
13-40	Stool Hemoccult	Comparison	1,161		
		Background RH	363	0.63 (0.31,1.28)	0.201
		Low RH	231	1.08 (0.55,2.13)	0.822
		High RH	230	0.86 (0.39,1.90)	0.705
		Low plus High RH	461	0.96 (0.55,1.68)	0.895
13-42	Prealbumin	Comparison	1,193		
		Background RH	374	1.74 (0.61,5.01)	0.302
		Low RH	235	0.49 (0.06,3.93)	0.506
		High RH	238	4.34 (1.25,15.05)	0.021
		Low plus High RH	473	1.48 (0.41,5.32)	0.552
13-44	Albumin	Comparison	1,193		
		Background RH	374	0.67 (0.14,3.20)	0.611
		Low RH	235	--	--
		High RH	238	--	--
		Low plus High RH	473	--	--

**Table G-19. Summary of Adjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
13-46	α -1-Acid Glycoprotein	Comparison	1,193		
		Background RH	374	1.12 (0.58,2.16)	0.745
		Low RH	235	1.47 (0.73,2.94)	0.279
		High RH	238	1.54 (0.77,3.08)	0.222
		Low plus High RH	473	1.50 (0.88,2.58)	0.138
13-50	α -2-Macroglobulin	Comparison	1,193		
		Background RH	374	0.45 (0.19,1.10)	0.079
		Low RH	235	0.61 (0.27,1.40)	0.246
		High RH	238	1.09 (0.51,2.31)	0.823
		Low plus High RH	473	0.82 (0.45,1.49)	0.511
13-52	Apolipoprotein B	Comparison	1,193		
		Background RH	374	0.79 (0.62,1.00)	0.050
		Low RH	235	0.82 (0.62,1.09)	0.164
		High RH	238	0.97 (0.73,1.30)	0.849
		Low plus High RH	473	0.89 (0.72,1.11)	0.305
13-54	C3 Complement	Comparison	1,193		
		Background RH	374	1.25 (0.61,2.57)	0.536
		Low RH	235	0.21 (0.03,1.57)	0.128
		High RH	238	0.49 (0.11,2.17)	0.351
		Low plus High RH	473	0.32 (0.09,1.16)	0.083
13-56	C4 Complement	Comparison	1,193		
		Background RH	374	2.99 (0.40,22.39)	0.286
		Low RH	235	--	--
		High RH	238	--	--
		Low plus High RH	473	--	--
13-58	Haptoglobin	Comparison	1,193		
		Background RH	374	1.32 (1.01,1.72)	0.042
		Low RH	235	1.25 (0.92,1.69)	0.160
		High RH	238	1.15 (0.84,1.56)	0.382
		Low plus High RH	473	1.19 (0.95,1.51)	0.136
13-60	Transferrin	Comparison	1,193		
		Background RH	374	0.73 (0.48,1.11)	0.142
		Low RH	235	0.78 (0.49,1.26)	0.311
		High RH	238	0.57 (0.32,0.99)	0.045
		Low plus High RH	473	0.66 (0.45,0.98)	0.039
14-3	Essential Hypertension	Comparison	1,145		
		Background RH	356	0.87 (0.66,1.14)	0.320
		Low RH	217	0.87 (0.63,1.20)	0.395
		High RH	235	1.27 (0.93,1.74)	0.131
		Low plus High RH	452	1.06 (0.84,1.35)	0.624
14-4	Heart Disease (Excluding Essential Hypertension)	Comparison	1,155		
		Background RH	360	1.34 (1.03,1.75)	0.032
		Low RH	221	1.33 (0.96,1.84)	0.081
		High RH	236	1.03 (0.76,1.40)	0.865
		Low plus High RH	457	1.16 (0.92,1.48)	0.209

**Table G-19. Summary of Adjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
14-5	Myocardial Infarction	Comparison	1,155		
		Background RH	360	0.89 (0.55,1.43)	0.625
		Low RH	221	0.84 (0.49,1.46)	0.544
		High RH	236	1.39 (0.83,2.32)	0.215
		Low plus High RH	457	1.09 (0.73,1.63)	0.673
14-6	Stroke or Transient Ischemia Attack	Comparison	1,155		
		Background RH	360	0.97 (0.30,3.16)	0.956
		Low RH	221	0.42 (0.05,3.26)	0.404
		High RH	236	2.65 (0.83,8.46)	0.100
		Low plus High RH	457	1.08 (0.32,3.71)	0.900
14-8	Systolic Blood Pressure	Comparison	1,155		
		Background RH	360	1.00 (0.73,1.37)	0.983
		Low RH	221	1.12 (0.79,1.59)	0.532
		High RH	236	0.84 (0.57,1.23)	0.365
		Low plus High RH	457	0.96 (0.73,1.27)	0.791
14-10	Diastolic Blood Pressure	Comparison	1,155		
		Background RH	360	0.78 (0.41,1.48)	0.449
		Low RH	221	0.91 (0.45,1.83)	0.792
		High RH	236	1.46 (0.80,2.68)	0.221
		Low plus High RH	457	1.16 (0.71,1.91)	0.551
14-11	Heart Sounds	Comparison	1,155		
		Background RH	360	0.45 (0.21,0.97)	0.041
		Low RH	221	0.80 (0.39,1.61)	0.528
		High RH	236	1.05 (0.52,2.11)	0.901
		Low plus High RH	457	0.92 (0.54,1.56)	0.750
14-12	Overall Electrocardiograph	Comparison	1,155		
		Background RH	360	1.00 (0.76,1.32)	0.980
		Low RH	221	0.73 (0.52,1.02)	0.063
		High RH	236	1.10 (0.78,1.54)	0.578
		Low plus High RH	457	0.90 (0.70,1.16)	0.423
14-13	Right Bundle Branch Block	Comparison	1,155		
		Background RH	360	1.04 (0.47,2.29)	0.920
		Low RH	221	0.55 (0.19,1.60)	0.273
		High RH	236	1.19 (0.49,2.88)	0.704
		Low plus High RH	457	0.82 (0.39,1.71)	0.594
14-14	Left Bundle Branch Block	Comparison	1,155		
		Background RH	360	0.87 (0.23,3.33)	0.838
		Low RH	221	0.37 (0.05,2.91)	0.341
		High RH	236	--	--
		Low plus High RH	457	--	--
14-15	Non-Specific ST- and T-Wave Changes	Comparison	1,155		
		Background RH	360	0.82 (0.58,1.15)	0.242
		Low RH	221	0.91 (0.62,1.32)	0.614
		High RH	236	1.26 (0.86,1.84)	0.238
		Low plus High RH	457	1.07 (0.80,1.43)	0.628

**Table G-19. Summary of Adjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
14-16	Bradycardia	Comparison	1,155		
		Background RH	360	0.81 (0.44,1.49)	0.497
		Low RH	221	0.49 (0.17,1.40)	0.183
		High RH	236	0.35 (0.08,1.50)	0.156
		Low plus High RH	457	0.41 (0.16,1.05)	0.062
14-17	Tachycardia	Comparison	1,155		
		Background RH	360	2.01 (0.16,24.61)	0.585
		Low RH	221	--	--
		High RH	236	8.10 (1.19,55.01)	0.032
		Low plus High RH	457	--	--
14-18	Arrhythmia	Comparison	1,155		
		Background RH	360	0.87 (0.49,1.57)	0.647
		Low RH	221	1.17 (0.65,2.11)	0.596
		High RH	236	1.10 (0.56,2.12)	0.774
		Low plus High RH	457	1.13 (0.70,1.83)	0.604
14-19	Evidence of Prior Myocardial Infarction	Comparison	1,155		
		Background RH	360	0.69 (0.34,1.37)	0.285
		Low RH	221	0.79 (0.39,1.61)	0.524
		High RH	236	1.11 (0.52,2.36)	0.783
		Low plus High RH	457	0.94 (0.54,1.65)	0.841
14-20	ECG: Other Diagnoses	Comparison	1,186		
		Background RH	368	2.89 (0.16,52.97)	0.474
		Low RH	227	--	--
		High RH	239	12.41 (1.00,154.15)	0.050
		Low plus High RH	466	--	--
14-21	Funduscopic Examination	Comparison	1,154		
		Background RH	359	1.04 (0.70,1.55)	0.842
		Low RH	221	0.82 (0.52,1.30)	0.402
		High RH	236	0.95 (0.60,1.51)	0.836
		Low plus High RH	457	0.89 (0.63,1.26)	0.500
14-22	Carotid Bruits	Comparison	1,155		
		Background RH	360	1.06 (0.47,2.38)	0.893
		Low RH	221	0.69 (0.25,1.86)	0.460
		High RH	236	1.01 (0.41,2.45)	0.991
		Low plus High RH	457	0.84 (0.41,1.71)	0.625
14-23	Radial Pulses	Comparison	1,155		
		Background RH	360	3.27 (0.64,16.71)	0.155
		Low RH	221	3.82 (0.53,27.51)	0.183
		High RH	236	1.26 (0.11,14.89)	0.856
		Low plus High RH	457	2.15 (0.36,13.04)	0.404
14-24	Femoral Pulses	Comparison	1,154		
		Background RH	360	1.22 (0.44,3.36)	0.702
		Low RH	221	1.71 (0.58,4.98)	0.329
		High RH	236	2.45 (0.76,7.90)	0.134
		Low plus High RH	457	2.06 (0.85,4.96)	0.108

**Table G-19. Summary of Adjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
14-25	Popliteal Pulses	Comparison	1,153		
		Background RH	360	0.88 (0.37,2.05)	0.760
		Low RH	221	1.15 (0.45,2.92)	0.776
		High RH	236	1.08 (0.40,2.86)	0.884
		Low plus High RH	457	1.11 (0.53,2.30)	0.781
14-26	Dorsalis Pedis Pulses	Comparison	1,153		
		Background RH	360	0.94 (0.59,1.50)	0.792
		Low RH	221	0.99 (0.58,1.70)	0.977
		High RH	236	0.89 (0.50,1.58)	0.685
		Low plus High RH	457	0.94 (0.61,1.43)	0.761
14-27	Posterior Tibial Pulses	Comparison	1,151		
		Background RH	360	1.08 (0.62,1.89)	0.784
		Low RH	221	1.31 (0.71,2.39)	0.387
		High RH	236	1.21 (0.63,2.30)	0.571
		Low plus High RH	457	1.25 (0.77,2.03)	0.358
14-28	Leg Pulses	Comparison	1,151		
		Background RH	360	1.01 (0.66,1.53)	0.981
		Low RH	221	1.01 (0.63,1.64)	0.955
		High RH	236	0.91 (0.54,1.53)	0.725
		Low plus High RH	457	0.96 (0.66,1.40)	0.832
14-29	Peripheral Pulses	Comparison	1,151		
		Background RH	360	1.00 (0.66,1.52)	0.997
		Low RH	221	1.05 (0.65,1.70)	0.833
		High RH	236	0.94 (0.57,1.57)	0.828
		Low plus High RH	457	1.00 (0.68,1.45)	0.981
14-30	ICVI Index	Comparison	1,155		
		Background RH	360	0.69 (0.32,1.48)	0.340
		Low RH	221	0.98 (0.46,2.11)	0.968
		High RH	236	1.41 (0.69,2.89)	0.346
		Low plus High RH	457	1.19 (0.67,2.09)	0.555
15-14	Prothrombin Time	Comparison	986		
		Background RH	308	1.41 (0.52,3.85)	0.501
		Low RH	182	1.01 (0.28,3.71)	0.984
		High RH	193	0.49 (0.06,3.96)	0.502
		Low plus High RH	375	0.70 (0.19,2.57)	0.586
15-15	RBC Morphology	Comparison	1,210		
		Background RH	380	1.18 (0.72,1.93)	0.517
		Low RH	238	1.39 (0.84,2.30)	0.206
		High RH	239	1.08 (0.60,1.94)	0.800
		Low plus High RH	477	1.22 (0.80,1.86)	0.352
15-18	Absolute Neutrophils (Zero vs. Nonzero) (bands)	Comparison	1,210		
		Background RH	380	1.02 (0.75,1.40)	0.897
		Low RH	238	1.03 (0.72,1.49)	0.859
		High RH	239	0.88 (0.59,1.30)	0.515
		Low plus High RH	477	0.95 (0.72,1.27)	0.741

**Table G-19. Summary of Adjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
15-22	Absolute Eosinophils (Zero vs. Nonzero)	Comparison	1,210		
		Background RH	380	1.07 (0.74,1.55)	0.705
		Low RH	238	1.16 (0.77,1.76)	0.467
		High RH	239	0.82 (0.53,1.27)	0.376
		Low plus High RH	477	0.98 (0.71,1.35)	0.885
15-24	Absolute Basophils (Zero vs. Nonzero)	Comparison	1,210		
		Background RH	380	1.11 (0.87,1.41)	0.395
		Low RH	238	1.47 (1.10,1.95)	0.009
		High RH	239	1.00 (0.75,1.33)	0.979
		Low plus High RH	477	1.21 (0.97,1.50)	0.091
16-3	Thyroid Disease	Comparison	1,208		
		Background RH	376	0.92 (0.60,1.42)	0.707
		Low RH	237	0.70 (0.40,1.22)	0.209
		High RH	240	1.07 (0.64,1.81)	0.792
		Low plus High RH	477	0.87 (0.57,1.30)	0.490
16-4	Composite Diabetes Indicator	Comparison	1,183		
		Background RH	375	0.69 (0.46,1.02)	0.065
		Low RH	232	1.22 (0.83,1.79)	0.311
		High RH	238	1.47 (1.00,2.17)	0.048
		Low plus High RH	470	1.34 (1.00,1.80)	0.049
16-7	Thyroid Gland	Comparison	1,165		
		Background RH	367	0.65 (0.21,2.01)	0.457
		Low RH	233	0.29 (0.04,2.19)	0.229
		High RH	233	0.56 (0.07,4.62)	0.590
		Low plus High RH	466	0.40 (0.09,1.81)	0.234
16-8	Testicular Examination	Comparison	1,199		
		Background RH	374	0.84 (0.45,1.58)	0.594
		Low RH	237	1.46 (0.78,2.71)	0.236
		High RH	240	1.39 (0.63,3.03)	0.415
		Low plus High RH	477	1.42 (0.82,2.45)	0.207
16-12	Thyroxine	Comparison	1,161		
		Background RH	365	1.23 (0.63,2.42)	0.545
		Low RH	233	0.45 (0.14,1.49)	0.192
		High RH	233	1.53 (0.62,3.73)	0.354
		Low plus High RH	466	0.83 (0.38,1.82)	0.641
16-13	Anti-Thyroid Antibodies	Comparison	1,161		
		Background RH	365	1.07 (0.27,4.26)	0.921
		Low RH	233	0.73 (0.09,5.99)	0.765
		High RH	233	1.07 (0.12,9.66)	0.951
		Low plus High RH	466	0.88 (0.17,4.46)	0.879
16-15	Fasting Glucose	Comparison	1,200		
		Background RH	377	0.91 (0.63,1.31)	0.609
		Low RH	235	1.03 (0.70,1.53)	0.877
		High RH	240	1.44 (0.99,2.11)	0.056
		Low plus High RH	475	1.22 (0.91,1.64)	0.178

**Table G-19. Summary of Adjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
16-17	2-Hour Postprandial Glucose	Comparison	987		
		Background RH	338	0.94 (0.64,1.37)	0.729
		Low RH	183	1.12 (0.73,1.72)	0.616
		High RH	181	1.01 (0.64,1.60)	0.960
		Low plus High RH	364	1.06 (0.76,1.49)	0.722
16-18	Fasting Urinary Glucose	Comparison	1,200		
		Background RH	377	0.63 (0.27,1.43)	0.265
		Low RH	235	0.92 (0.43,1.97)	0.827
		High RH	240	1.33 (0.71,2.49)	0.369
		Low plus High RH	475	1.11 (0.65,1.89)	0.704
16-19	2-Hour Postprandial Urinary Glucose	Comparison	985		
		Background RH	337	1.32 (0.98,1.78)	0.072
		Low RH	182	1.41 (0.98,2.02)	0.064
		High RH	181	0.97 (0.66,1.44)	0.885
		Low plus High RH	363	1.17 (0.88,1.56)	0.283
16-23	α -1-C Hemoglobin	Comparison	1,200		
		Background RH	377	0.84 (0.53,1.35)	0.474
		Low RH	235	0.94 (0.58,1.52)	0.799
		High RH	240	1.76 (1.16,2.67)	0.008
		Low plus High RH	475	1.29 (0.91,1.82)	0.148
16-25	Total Testosterone	Comparison	1,189		
		Background RH	370	0.98 (0.59,1.62)	0.934
		Low RH	234	0.95 (0.55,1.62)	0.841
		High RH	237	1.55 (0.94,2.55)	0.085
		Low plus High RH	471	1.21 (0.82,1.80)	0.340
16-27	Free Testosterone	Comparison	1,189		
		Background RH	370	0.88 (0.32,2.46)	0.811
		Low RH	234	1.38 (0.57,3.35)	0.470
		High RH	237	0.28 (0.04,2.21)	0.227
		Low plus High RH	471	0.62 (0.19,2.01)	0.424
16-29	Estradiol	Comparison	1,213		
		Background RH	381	0.97 (0.75,1.27)	0.842
		Low RH	239	0.79 (0.57,1.09)	0.155
		High RH	243	1.05 (0.77,1.44)	0.757
		Low plus High RH	482	0.91 (0.72,1.16)	0.460
16-31	LH	Comparison	1,213		
		Background RH	381	1.28 (0.79,2.08)	0.313
		Low RH	239	0.83 (0.44,1.58)	0.573
		High RH	243	0.76 (0.36,1.60)	0.475
		Low plus High RH	482	0.80 (0.47,1.34)	0.392
16-33	FSH	Comparison	1,213		
		Background RH	381	1.10 (0.72,1.69)	0.652
		Low RH	239	0.93 (0.55,1.56)	0.781
		High RH	243	1.16 (0.64,2.08)	0.621
		Low plus High RH	482	1.04 (0.68,1.58)	0.859

**Table G-19. Summary of Adjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
17-14	ANA Test	Comparison	1,154		
		Background RH	365	1.04 (0.82,1.33)	0.738
		Low RH	220	0.85 (0.63,1.14)	0.276
		High RH	229	1.15 (0.85,1.55)	0.364
		Low plus High RH	449	0.99 (0.79,1.24)	0.936
17-15	ANA Thyroid Microsomal Antibody	Comparison	1,154		
		Background RH	365	1.03 (0.51,2.12)	0.925
		Low RH	220	1.12 (0.49,2.59)	0.785
		High RH	229	0.81 (0.30,2.16)	0.671
		Low plus High RH	449	0.95 (0.48,1.90)	0.883
17-16	MSK Smooth Muscle Antibody	Comparison	1,154		
		Background RH	365	1.28 (0.90,1.83)	0.173
		Low RH	220	1.07 (0.70,1.65)	0.752
		High RH	229	0.59 (0.36,1.00)	0.048
		Low plus High RH	449	0.79 (0.55,1.14)	0.209
17-17	MSK Mitochondrial Antibody	Comparison	1,154		
		Background RH	365	3.55 (0.48,26.04)	0.213
		Low RH	220	4.30 (0.57,32.27)	0.156
		High RH	229	--	--
		Low plus High RH	449	--	--
17-18	MSK Parietal Antibody	Comparison	1,154		
		Background RH	365	0.63 (0.30,1.31)	0.216
		Low RH	220	1.50 (0.82,2.75)	0.192
		High RH	229	0.97 (0.47,1.99)	0.928
		Low plus High RH	449	1.20 (0.72,2.00)	0.490
17-19	Rheumatoid Factor	Comparison	1,154		
		Background RH	365	1.04 (0.71,1.51)	0.841
		Low RH	220	1.03 (0.66,1.61)	0.890
		High RH	229	0.59 (0.33,1.04)	0.068
		Low plus High RH	449	0.77 (0.53,1.14)	0.195
18-3	Asthma	Comparison	1,207		
		Background RH	376	1.52 (0.86,2.70)	0.149
		Low RH	234	1.13 (0.54,2.36)	0.753
		High RH	240	1.29 (0.64,2.61)	0.479
		Low plus High RH	474	1.21 (0.69,2.10)	0.506
18-4	Bronchitis	Comparison	1,187		
		Background RH	371	1.31 (0.98,1.75)	0.073
		Low RH	227	0.94 (0.65,1.36)	0.734
		High RH	239	1.10 (0.78,1.56)	0.584
		Low plus High RH	466	1.02 (0.78,1.34)	0.891
18-5	Pneumonia	Comparison	1,167		
		Background RH	360	0.90 (0.61,1.33)	0.602
		Low RH	221	0.98 (0.63,1.54)	0.929
		High RH	236	0.74 (0.44,1.25)	0.265
		Low plus High RH	457	0.85 (0.59,1.23)	0.386

**Table G-19. Summary of Adjusted Results for Dichotomous Variables – Model 3
(Ranch Hands and Comparisons by Dioxin Category) (Continued)**

Table Ref.	Clinical Parameter	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
18-6	Thorax and Lung Abnormalities	Comparison	1,212		
		Background RH	380	0.84 (0.55,1.28)	0.412
		Low RH	238	1.01 (0.63,1.62)	0.953
		High RH	243	1.01 (0.62,1.64)	0.977
		Low plus High RH	481	1.01 (0.70,1.46)	0.955
18-7	X-ray Interpretation	Comparison	1,212		
		Background RH	380	1.69 (1.18,2.43)	0.004
		Low RH	238	1.11 (0.70,1.75)	0.657
		High RH	241	0.66 (0.38,1.13)	0.127
		Low plus High RH	479	0.85 (0.58,1.24)	0.406

--: Relative risk, confidence interval, and p-value are not presented because of the sparse number of participants with abnormalities.

Note: Relative risk and confidence interval relative to Comparisons.

RH = Ranch Hand.

Comparison: 1987 Dioxin \leq 10 ppt.

Background: (Ranch Hand): 1987 Dioxin \leq 10 ppt.

Low (Ranch Hand): 1987 Dioxin $>$ 10 ppt, 10 ppt $<$ Initial Dioxin \leq 94 ppt.

High (Ranch Hand): 1987 Dioxin $>$ 10 ppt, Initial Dioxin $>$ 94 ppt.

Table G-20. Summary of Adjusted Results for Dichotomous Variables – Model 4 (Ranch Hands: Log₂ (1987 Dioxin + 1))

Table Ref.	Clinical Parameter	Adj. Relative Risk (95% C.I.)	p-Value
9-3	Self-perception of Health	1.14 (0.98,1.32)	0.079
9-4	Appearance of Illness or Distress	1.05 (0.72,1.52)	0.800
9-5	Relative Age Appearance	0.89 (0.75,1.05)	0.153
9-7	Body Fat	1.29 (1.14,1.46)	<0.001
9-9	Erythrocyte Sedimentation Rate	1.14 (0.94,1.38)	0.169
10-3	Skin Neoplasms	0.92 (0.82,1.03)	0.147
10-4	Malignant Skin Neoplasms	1.06 (0.91,1.25)	0.447
10-5	Benign Skin Neoplasms	0.84 (0.74,0.95)	0.005
10-6	Skin Neoplasms of Uncertain Behavior or Unspecified Nature	1.11 (0.69,1.81)	0.664
10-7	Basal Cell Carcinoma (All Sites Combined)	0.99 (0.83,1.18)	0.924
10-8	Basal Cell Carcinoma (Ear, Face, Head, and Neck)	0.89 (0.74,1.09)	0.257
10-9	Basal Cell Carcinoma (Trunk)	1.51 (1.07,2.13)	0.016
10-10	Basal Cell Carcinoma (Upper Extremities)	1.00 (0.63,1.57)	0.987
10-11	Basal Cell Carcinoma (Lower Extremities)	0.91 (0.42,1.98)	0.803
10-12	Squamous Cell Carcinoma	1.07 (0.70,1.63)	0.749
10-13	Nonmelanoma	1.02 (0.86,1.21)	0.786
10-14	Melanoma	1.18 (0.81,1.71)	0.399
10-15	Systemic Neoplasms (All Sites Combined)	1.05 (0.93,1.18)	0.399
10-16	Malignant Systemic Neoplasms	1.06 (0.84,1.34)	0.599
10-17	Benign Systemic Neoplasms	1.01 (0.89,1.14)	0.905
10-18	Systemic Neoplasms of Uncertain Behavior or Unspecified Nature	1.07 (0.67,1.72)	0.767
10-19	Malignant Systemic Neoplasms (Eye, Ear, Face, Head, and Neck)	1.04 (0.57,1.91)	0.897
10-20	Malignant Systemic Neoplasms (Oral Cavity, Pharynx, and Larynx)	1.60 (0.65,3.97)	0.296
10-21	Malignant Systemic Neoplasms (Thymus, Heart, and Mediastinum)	0.31 (0.09,1.04)	0.017
10-22	Malignant Systemic Neoplasms (Thyroid Gland)	0.95 (0.34,2.70)	0.925
10-23	Malignant Systemic Neoplasms (Bronchus and Lung)	1.15 (0.63,2.11)	0.638
10-24	Malignant Systemic Neoplasms (Liver)	2.52 (1.03,6.15)	0.042
10-25	Malignant Systemic Neoplasms (Colon and Rectum)	1.44 (0.72,2.86)	0.291
10-26	Malignant Systemic Neoplasms (Kidney and Bladder)	1.14 (0.66,1.96)	0.634
10-27	Malignant Systemic Neoplasms (Prostate)	0.83 (0.56,1.23)	0.353
10-28	Malignant Systemic Neoplasms (Testicles)	1.35 (0.54,3.37)	0.517
10-29	Malignant Systemic Neoplasms (Connective and Other Soft Tissues)	2.36 (0.72,7.79)	0.155
10-30	Hodgkin's Disease	0.70 (0.08,6.51)	0.745
10-31	Non-Hodgkin's Lymphoma	0.31 (0.01,7.88)	0.443
10-32	Other Malignant Systemic Neoplasms of Lymphoid and Histiocytic Tissue	0.63 (0.09,4.17)	0.580
10-33	All Malignant Skin and Systemic Neoplasms	1.10 (0.94,1.27)	0.227
10-34	All Skin and Systemic Neoplasms	0.99 (0.88,1.11)	0.854
10-36	PSA	1.05 (0.81,1.35)	0.735
11-3	Inflammatory Diseases	0.90 (0.52,1.57)	0.716
11-4	Hereditary and Degenerative Disorders	0.92 (0.77,1.11)	0.380
11-5	Peripheral Disorders	1.20 (1.04,1.38)	0.011
11-6	Other Neurological Disorders	0.97 (0.84,1.11)	0.625
11-7	Smell	0.83 (0.56,1.22)	0.333
11-8	Visual Fields	1.40 (0.58,3.38)	0.456
11-9	Light Reaction	0.75 (0.18,3.12)	0.681

**Table G-20. Summary of Adjusted Results for Dichotomous Variables – Model 4
(Ranch Hands: \log_2 (1987 Dioxin + 1)) (Continued)**

Table Ref.	Clinical Parameter	Adj. Relative Risk (95% C.I.)	p-Value
11-10	Ocular Movement	0.91 (0.63,1.32)	0.614
11-11	Facial Sensation	0.79 (0.23,2.66)	0.694
11-12	Jaw Clench	1.02 (0.34,3.08)	0.969
11-13	Smile	0.99 (0.59,1.65)	0.972
11-14	Palpebral Fissure	1.17 (0.65,2.12)	0.598
11-15	Balance	0.95 (0.52,1.73)	0.860
11-16	Speech	0.73 (0.36,1.47)	0.370
11-17	Tongue Position Relative to Midline	1.02 (0.34,3.08)	0.969
11-18	Palate and Uvula Movement	1.19 (0.32,4.46)	0.800
11-19	Cranial Nerve Index	0.88 (0.71,1.10)	0.254
11-20	Neck Range of Motion	1.09 (0.94,1.26)	0.267
11-21	Pinprick	1.12 (0.88,1.42)	0.345
11-22	Light Touch	1.01 (0.75,1.36)	0.940
11-23	Muscle Status	0.98 (0.76,1.27)	0.897
11-24	Patellar Reflex	1.15 (0.80,1.64)	0.447
11-25	Achilles Reflex	1.12 (0.96,1.31)	0.157
11-26	Biceps Reflex	1.52 (0.89,2.61)	0.120
11-27	Babinski Reflex	0.65 (0.33,1.29)	0.223
11-29	Polyneuropathy Prevalence Index	1.16 (0.98,1.37)	0.080
11-30	Multiple Polyneuropathy Index	1.29 (0.95,1.76)	0.101
11-31	Confirmed Polyneuropathy Indicator	2.21 (1.24,3.96)	0.003
11-32	Tremor	0.93 (0.75,1.14)	0.478
11-33	Coordination	0.83 (0.57,1.21)	0.330
11-34	Romberg Sign	0.95 (0.52,1.73)	0.860
11-35	Gait	0.99 (0.78,1.25)	0.905
11-36	CNS Index	0.94 (0.80,1.10)	0.443
12-3	Psychoses	1.08 (0.84,1.40)	0.550
12-4	Alcohol Dependence	0.99 (0.82,1.20)	0.898
12-5	Drug Dependence	0.45 (0.10,2.11)	0.226
12-6	Anxiety	0.95 (0.84,1.07)	0.368
12-7	Other Neuroses	1.02 (0.91,1.14)	0.763
12-8	SCL-90-R Anxiety	0.96 (0.81,1.13)	0.619
12-9	SCL-90-R Depression	0.97 (0.84,1.13)	0.712
12-10	SCL-90-R Hostility	1.01 (0.84,1.23)	0.889
12-11	SCL-90-R Interpersonal Sensitivity	0.95 (0.82,1.10)	0.511
12-12	SCL-90-R Obsessive-Compulsive Behavior	1.00 (0.87,1.16)	0.964
12-13	SCL-90-R Paranoid Ideation	1.00 (0.82,1.20)	0.960
12-14	SCL-90-R Phobic Anxiety	1.03 (0.88,1.21)	0.727
12-15	SCL-90-R Psychoticism	1.06 (0.91,1.23)	0.484
12-16	SCL-90-R Somatization	0.95 (0.83,1.09)	0.458
12-17	SCL-90-R Global Severity Index (GSI)	1.04 (0.90,1.21)	0.555
12-18	SCL-90-R Positive Symptom Total (PST)	1.02 (0.89,1.18)	0.764
12-19	SCL-90-R Positive Symptom Distress Index (PSDI)	0.96 (0.81,1.15)	0.675
13-3	Uncharacterized Hepatitis	0.78 (0.55,1.12)	0.184
13-4	Jaundice	0.39 (0.24,0.65)	<0.001
13-5	Chronic Liver Disease and Cirrhosis (Alcohol-related)	1.09 (0.84,1.41)	0.506
13-6	Chronic Liver Disease and Cirrhosis (Non-alcohol-related)	1.02 (0.68,1.54)	0.920
13-7	Liver Abscess and Sequelae of Chronic Liver Disease	2.05 (0.68,6.15)	0.212
13-8	Enlarged Liver (Hepatomegaly)	0.93 (0.60,1.46)	0.753

**Table G-20. Summary of Adjusted Results for Dichotomous Variables – Model 4
(Ranch Hands: \log_2 (1987 Dioxin + 1)) (Continued)**

Table Ref.	Clinical Parameter	Adj. Relative Risk (95% C.I.)	p-Value
13-9	Other Liver Disorders	1.11 (0.99,1.25)	0.077
13-10	Current Hepatomegaly	1.05 (0.64,1.74)	0.838
13-12	AST	1.38 (1.12,1.71)	0.002
13-14	ALT	1.48 (1.20,1.83)	<0.001
13-16	GGT	1.27 (1.05,1.53)	0.012
13-18	Alkaline Phosphatase	0.69 (0.50,0.94)	0.020
13-20	Total Bilirubin	0.94 (0.73,1.21)	0.646
13-21	Direct Bilirubin	0.79 (0.17,3.72)	0.764
13-23	Lactic Dehydrogenase	1.01 (0.84,1.21)	0.892
13-25	Cholesterol	1.08 (0.93,1.24)	0.312
13-27	HDL Cholesterol	0.82 (0.68,0.98)	0.029
13-29	Cholesterol-HDL Ratio	1.13 (1.01,1.26)	0.025
13-31	Triglycerides	1.23 (1.09,1.40)	0.001
13-33	Creatine Phosphokinase	1.22 (1.00,1.49)	0.043
13-35	Serum Amylase	0.93 (0.68,1.26)	0.623
13-36	Antibodies for Hepatitis A	1.06 (0.94,1.19)	0.346
13-37	Evidence of Prior Hepatitis B	1.06 (0.89,1.25)	0.531
13-38	Current Hepatitis B	1.33 (0.27,6.59)	0.719
13-39	Antibodies for Hepatitis C	0.67 (0.40,1.14)	0.141
13-40	Stool Hemoccult	1.13 (0.83,1.53)	0.448
13-42	Prealbumin	1.00 (0.63,1.60)	0.993
13-44	Albumin	0.52 (0.09,3.01)	0.442
13-46	α -1-Acid Glycoprotein	0.87 (0.68,1.11)	0.261
13-50	α -2-Macroglobulin	1.50 (1.08,2.08)	0.014
13-52	Apolipoprotein B	1.07 (0.96,1.18)	0.242
13-54	C3 Complement	0.57 (0.39,0.84)	0.004
13-56	C4 Complement	0.26 (0.08,0.86)	0.024
13-58	Haptoglobin	0.91 (0.82,1.02)	0.107
13-60	Transferrin	1.03 (0.85,1.24)	0.785
14-3	Essential Hypertension	1.18 (1.04,1.34)	0.011
14-4	Heart Disease (Excluding Essential Hypertension)	0.92 (0.81,1.04)	0.159
14-5	Myocardial Infarction	1.16 (0.94,1.44)	0.170
14-6	Stroke or Transient Ischemia Attack	1.15 (0.71,1.85)	0.578
14-8	Systolic Blood Pressure	0.88 (0.76,1.02)	0.099
14-10	Diastolic Blood Pressure	1.20 (0.89,1.61)	0.228
14-11	Heart Sounds	1.24 (0.89,1.73)	0.193
14-12	Overall Electrocardiograph	1.02 (0.89,1.17)	0.753
14-13	Right Bundle Branch Block	1.02 (0.69,1.50)	0.922
14-14	Left Bundle Branch Block	0.56 (0.23,1.39)	0.199
14-15	Non-Specific ST- and T-Wave Changes	1.12 (0.95,1.32)	0.180
14-16	Bradycardia	0.98 (0.65,1.49)	0.932
14-17	Tachycardia	1.55 (0.85,2.84)	0.165
14-18	Arrhythmia	1.12 (0.85,1.49)	0.422
14-19	Evidence of Prior Myocardial Infarction	1.33 (0.95,1.87)	0.089
14-20	ECG: Other Diagnoses	1.47 (0.58,3.73)	0.413
14-21	Funduscopic Examination	1.03 (0.85,1.24)	0.767
14-22	Carotid Bruits	0.94 (0.65,1.36)	0.755
14-23	Radial Pulses	0.61 (0.30,1.21)	0.140
14-24	Femoral Pulses	1.29 (0.83,2.03)	0.255

**Table G-20. Summary of Adjusted Results for Dichotomous Variables – Model 4
(Ranch Hands: \log_2 (1987 Dioxin + 1)) (Continued)**

Table Ref.	Clinical Parameter	Adj. Relative Risk (95% C.I.)	p-Value
14-25	Popliteal Pulses	1.02 (0.72,1.46)	0.908
14-26	Dorsalis Pedis Pulses	1.07 (0.85,1.33)	0.580
14-27	Posterior Tibial Pulses	1.12 (0.88,1.43)	0.354
14-28	Leg Pulses	1.08 (0.88,1.31)	0.467
14-29	Peripheral Pulses	1.07 (0.88,1.30)	0.485
14-30	ICVI Index	1.07 (0.79,1.45)	0.666
15-14	Prothrombin Time	0.86 (0.54,1.38)	0.526
15-15	RBC Morphology	1.02 (0.84,1.25)	0.822
15-18	Absolute Neutrophils (bands) (Zero vs. Nonzero)	0.92 (0.80,1.06)	0.264
15-22	Absolute Eosinophils (Zero vs. Nonzero)	0.99 (0.84,1.16)	0.894
15-24	Absolute Basophils (Zero vs. Nonzero)	0.94 (0.84,1.05)	0.257
16-3	Past Thyroid Disease	1.10 (0.89,1.36)	0.358
16-4	Composite Diabetes Indicator	1.43 (1.21,1.68)	<0.001
16-7	Thyroid Gland	1.09 (0.50,2.36)	0.825
16-8	Testicular Examination	1.09 (0.82,1.44)	0.545
16-12	Thyroxine	1.14 (0.79,1.64)	0.487
16-13	Anti-Thyroid Antibodies	0.86 (0.41,1.80)	0.689
16-15	Fasting Glucose	1.25 (1.08,1.46)	0.003
16-17	2-Hour Postprandial Glucose	1.10 (0.91,1.33)	0.332
16-18	Fasting Urinary Glucose	1.47 (1.11,1.94)	0.006
16-19	2-Hour Postprandial Urinary Glucose	0.90 (0.78,1.03)	0.129
16-23	α -1-C Hemoglobin	1.37 (1.15,1.64)	<0.001
16-25	Total Testosterone	1.20 (0.96,1.49)	0.106
16-27	Free Testosterone	0.94 (0.52,1.70)	0.835
16-29	Estradiol	0.99 (0.89,1.12)	0.926
16-31	LH	0.84 (0.66,1.07)	0.154
16-33	FSH	1.16 (0.93,1.45)	0.188
17-14	ANA Test	0.96 (0.86,1.08)	0.512
17-15	ANA Thyroid Microsomal Antibody	0.96 (0.69,1.35)	0.824
17-16	MSK Smooth Muscle Antibody	0.89 (0.75,1.05)	0.155
17-17	MSK Mitochondrial Antibody	0.65 (0.31,1.38)	0.245
17-18	MSK Parietal Antibody	1.22 (0.93,1.60)	0.140
17-19	Rheumatoid Factor	0.86 (0.71,1.04)	0.122
18-3	Asthma	1.06 (0.81,1.37)	0.680
18-4	Bronchitis	0.90 (0.79,1.03)	0.137
18-5	Pneumonia	0.89 (0.73,1.08)	0.229
18-6	Thorax and Lung Abnormalities	1.20 (1.00,1.43)	0.054
18-7	X-ray Interpretation	0.80 (0.67,0.96)	0.015

Note: Relative risk for a twofold increase in 1987 dioxin.

Table G-21. Summary of Adjusted Results for Polytomous Variables – Model 1 (Ranch Hands vs. Comparisons)

Table Ref.	Clinical Parameter	Contrast	Occupational Category	Adj. Relative Risk (95% C.I.)	p-Value
11-28	Polyneuropathy Severity Index	Moderate vs. None or Mild	All	2.32 (1.14,4.73)	0.020
			Officer	1.72 (0.57,5.24)	0.338
			Enlisted Flyer	4.13 (0.83,20.52)	0.083
			Enlisted Groundcrew	2.16 (0.67,7.01)	0.200
	Severe vs. None or Mild	All		5.44 (0.59,50.52)	0.136
		Officer		--	--
		Enlisted Flyer		--	--
		Enlisted Groundcrew		1.64 (0.09,29.24)	0.738
13-48	α -1-Antitrypsin	Low vs. Normal	All	0.81 (0.37,1.78)	0.606
			Officer	1.10 (0.44,2.78)	0.834
			Enlisted Flyer	--	--
			Enlisted Groundcrew	0.47 (0.10,2.34)	0.358
	High vs. Normal	All		2.51 (0.80,7.90)	0.116
		Officer		--	--
		Enlisted Flyer		0.73 (0.08,6.49)	0.778
		Enlisted Groundcrew		2.69 (0.63,11.58)	0.183
15-4	RBC Count	Low vs. Normal	All	1.00 (0.66,1.51)	0.991
			Officer	0.95 (0.52,1.75)	0.869
			Enlisted Flyer	1.97 (0.73,5.29)	0.180
			Enlisted Groundcrew	0.75 (0.37,1.53)	0.426
	High vs. Normal	All		0.58 (0.22,1.54)	0.278
		Officer		0.23 (0.03,1.89)	0.170
		Enlisted Flyer		1.25 (0.17,9.24)	0.830
		Enlisted Groundcrew		0.73 (0.18,2.98)	0.660
15-6	WBC Count	Low vs. Normal	All	1.18 (0.80,1.74)	0.415
			Officer	1.10 (0.62,1.96)	0.754
			Enlisted Flyer	2.12 (0.73,6.09)	0.165
			Enlisted Groundcrew	1.03 (0.55,1.93)	0.923

**Table G-21. Summary of Adjusted Results for Polytomous Variables – Model 1 (Ranch Hands vs. Comparisons)
(Continued)**

Table Ref.	Clinical Parameter	Contrast	Occupational Category	Adj. Relative Risk (95% C.I.)	p-Value
15-6	WBC Count (continued)	High vs. Normal	All	0.93 (0.58,1.51)	0.783
			Officer	0.91 (0.35,2.35)	0.843
			Enlisted Flyer	0.99 (0.37,2.68)	0.985
			Enlisted Groundcrew	0.93 (0.47,1.82)	0.822
15-8	Hemoglobin	Low vs. Normal	All	1.15 (0.81,1.63)	0.433
			Officer	1.25 (0.72,2.19)	0.433
			Enlisted Flyer	1.58 (0.73,3.44)	0.246
			Enlisted Groundcrew	0.90 (0.51,1.58)	0.713
	High vs. Normal	All		0.61 (0.16,2.38)	0.480
			Officer	1.52 (0.21,10.95)	0.675
			Enlisted Flyer	--	--
			Enlisted Groundcrew	--	--
15-10	Hematocrit	Low vs. Normal	All	1.04 (0.59,1.85)	0.886
			Officer	0.95 (0.38,2.36)	0.908
			Enlisted Flyer	1.84 (0.51,6.72)	0.353
			Enlisted Groundcrew	0.85 (0.33,2.18)	0.739
	High vs. Normal	All		0.28 (0.03,2.40)	0.245
			Officer	--	--
			Enlisted Flyer	--	--
			Enlisted Groundcrew	--	--
15-12	Platelet Count	Low vs. Normal	All	0.84 (0.50,1.42)	0.509
			Officer	2.64 (1.15,6.05)	0.022
			Enlisted Flyer	0.10 (0.01,0.79)	0.029
			Enlisted Groundcrew	0.48 (0.19,1.23)	0.127
	High vs. Normal	All		1.13 (0.30,4.27)	0.853
			Officer	0.55 (0.06,5.37)	0.606
			Enlisted Flyer	1.18 (0.07,19.42)	0.906
			Enlisted Groundcrew	2.61 (0.23,29.36)	0.437

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**Table G-21. Summary of Adjusted Results for Polytomous Variables – Model 1 (Ranch Hands vs. Comparisons)
(Continued)**

Table Ref.	Clinical Parameter	Contrast	Occupational Category	Adj. Relative Risk (95% C.I.)	p-Value
16-5	Diabetic Severity	No Treatment vs. Nondiabetic	All	1.10 (0.74,1.62)	0.642
			Officer	0.96 (0.50,1.86)	0.902
			Enlisted Flyer	0.71 (0.29,1.72)	0.445
			Enlisted Groundcrew	1.48 (0.83,2.66)	0.185
	Diet Only vs. Nondiabetic		All	1.52 (0.78,2.96)	0.219
			Officer	2.04 (0.69,5.99)	0.195
			Enlisted Flyer	1.09 (0.15,7.93)	0.931
			Enlisted Groundcrew	1.32 (0.51,3.41)	0.572
	Oral Hypoglycemic vs. Nondiabetic		All	0.73 (0.48,1.11)	0.137
			Officer	0.68 (0.33,1.39)	0.288
			Enlisted Flyer	0.75 (0.29,1.91)	0.544
			Enlisted Groundcrew	0.76 (0.41,1.41)	0.384
	Requiring Insulin vs. Nondiabetic		All	2.20 (1.15,4.20)	0.017
			Officer	2.39 (0.92,6.20)	0.074
			Enlisted Flyer	1.22 (0.24,6.24)	0.811
			Enlisted Groundcrew	2.52 (0.88,7.23)	0.084
16-10	TSH	Abnormal Low vs. Normal	All	1.57 (0.63,3.88)	0.332
			Officer	2.78 (0.50,15.33)	0.241
			Enlisted Flyer	2.01 (0.33,12.28)	0.448
			Enlisted Groundcrew	0.88 (0.21,3.71)	0.859
	Abnormal High vs. Normal		All	1.42 (0.89,2.28)	0.140
			Officer	1.18 (0.57,2.44)	0.648
			Enlisted Flyer	0.63 (0.15,2.55)	0.513
			Enlisted Groundcrew	2.11 (1.04,4.28)	0.037
16-21	Serum Insulin	Abnormal Low vs. Normal	All	0.79 (0.58,1.08)	0.143
			Officer	0.76 (0.48,1.22)	0.256
			Enlisted Flyer	0.83 (0.35,1.95)	0.671
			Enlisted Groundcrew	0.81 (0.50,1.33)	0.412

**Table G-21. Summary of Adjusted Results for Polytomous Variables – Model 1 (Ranch Hands vs. Comparisons)
(Continued)**

Table Ref.	Clinical Parameter	Contrast	Occupational Category	Adj. Relative Risk (95% C.I.)	p-Value
16-21	Serum Insulin (continued)	Abnormal High vs. Normal	All	0.96 (0.77,1.21)	0.749
			Officer	1.08 (0.75,1.53)	0.688
			Enlisted Flyer	0.72 (0.41,1.27)	0.257
			Enlisted Groundcrew	0.97 (0.69,1.36)	0.870
18-11	Loss of Vital Capacity	Mild vs. None	All	0.96 (0.69,1.35)	0.832
			Officer	1.09 (0.62,1.90)	0.768
			Enlisted Flyer	0.68 (0.31,1.52)	0.349
			Enlisted Groundcrew	1.00 (0.61,1.63)	0.999
	Moderate or Severe vs. None	All	All	0.67 (0.31,1.47)	0.324
			Officer	1.42 (0.40,5.00)	0.586
			Enlisted Flyer	0.25 (0.03,2.30)	0.220
			Enlisted Groundcrew	0.52 (0.16,1.70)	0.279
18-12	Obstructive Abnormality	Mild vs. None	All	1.08 (0.88,1.32)	0.449
			Officer	1.38 (1.01,1.89)	0.041
			Enlisted Flyer	0.79 (0.48,1.29)	0.345
			Enlisted Groundcrew	0.96 (0.70,1.32)	0.821
	Moderate vs. None	All	All	0.97 (0.66,1.44)	0.887
			Officer	1.21 (0.63,2.32)	0.560
			Enlisted Flyer	1.36 (0.57,3.23)	0.492
			Enlisted Groundcrew	0.65 (0.35,1.22)	0.180
	Severe vs. None	All	All	1.22 (0.57,2.59)	0.605
			Officer	1.81 (0.50,6.57)	0.366
			Enlisted Flyer	1.27 (0.35,4.58)	0.715
			Enlisted Groundcrew	0.69 (0.16,2.87)	0.607

--: Relative risk, confidence interval, and p-value are not presented because of the sparse number of participants with abnormalities.

Table G-22. Summary of Adjusted Results for Polytomous Variables – Model 2 (Ranch Hands: Log₂ (Initial Dioxin))

Table Ref.	Clinical Parameter	Contrast	Adj. Relative Risk (95% C.I.)	p-Value
11-28	Polyneuropathy Severity Index	Moderate vs. None or Mild	1.52 (1.02,2.28)	0.042
		Severe vs. None or Mild	0.87 (0.24,3.20)	0.832
13-48	α -1-Antitrypsin	Low vs. Normal	0.75 (0.30,1.84)	0.526
		High vs. Normal	0.80 (0.21,3.00)	0.735
15-4	RBC Count	Low vs. Normal	0.95 (0.64,1.41)	0.804
		High vs. Normal	0.88 (0.39,1.99)	0.751
15-6	WBC Count	Low vs. Normal	0.61 (0.38,0.99)	0.043
		High vs. Normal	0.83 (0.54,1.27)	0.395
15-8	Hemoglobin	Low vs. Normal	0.85 (0.61,1.20)	0.364
		High vs. Normal	1.04 (0.17,6.53)	0.966
15-10	Hematocrit	Low vs. Normal	1.10 (0.66,1.85)	0.714
		High vs. Normal	1.07 (0.17,6.61)	0.942
15-12	Platelet Count	Low vs. Normal	0.69 (0.35,1.37)	0.290
		High vs. Normal	0.67 (0.16,2.88)	0.590
16-5	Diabetic Severity	No Treatment vs. Nondiabetic	1.29 (0.93,1.78)	0.121
		Diet Only vs. Nondiabetic	1.25 (0.74,2.11)	0.411
		Oral Hypoglycemic vs. Nondiabetic	1.41 (0.98,2.01)	0.062
		Requiring Insulin vs. Nondiabetic	2.47 (1.43,4.25)	0.001
16-10	Thyroid Stimulating Hormone	Low vs. Normal	1.62 (0.82,3.20)	0.161
		High vs. Normal	1.29 (0.90,1.85)	0.169
16-21	Serum Insulin	Low vs. Normal	0.97 (0.65,1.47)	0.901
		High vs. Normal	1.15 (0.93,1.43)	0.182
18-11	Loss of Vital Capacity	Mild vs. None	0.91 (0.66,1.24)	0.539
		Moderate or Severe vs. None	1.02 (0.35,2.99)	0.973
18-12	Obstructive Abnormality	Mild vs. None	0.86 (0.72,1.02)	0.082
		Moderate vs. None	0.98 (0.67,1.42)	0.902
		Severe vs. None	0.63 (0.28,1.44)	0.276

Note: Relative risk for a twofold increase in initial dioxin.

Table G-23. Summary of Adjusted Results for Polytomous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category)

Table Ref.	Clinical Parameter	Contrast	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
11-28	Polyneuropathy Severity Index	Moderate vs. None or Mild	Comparison	1,145		
			Background RH	358	1.29 (0.45,3.70)	0.641
			Low RH	225	2.35 (0.90,6.09)	0.079
			High RH	225	3.06 (1.16,8.11)	0.024
			Low plus High RH	450	2.68 (1.22,5.90)	0.014
		Severe vs. None or Mild	Comparison	1,145		
			Background RH	358	2.59 (0.15,43.89)	0.511
			Low RH	225	7.43 (0.62,89.56)	0.114
			High RH	225	9.83 (0.52,186.07)	0.128
			Low plus High RH	450	8.55 (0.77,94.34)	0.080
13-48	α-1-Antitrypsin	Low vs. Normal	Comparison	1,193		
			Background RH	374	0.78 (0.30,2.01)	0.602
			Low RH	235	0.76 (0.17,3.35)	0.712
			High RH	238	1.41 (0.28,7.06)	0.677
			Low plus High RH	473	1.03 (0.32,3.31)	0.955
		High vs. Normal	Comparison	1,193		
			Background RH	374	2.76 (0.74,10.35)	0.131
			Low RH	235	1.16 (0.13,10.62)	0.895
			High RH	238	2.64 (0.43,16.23)	0.295
			Low plus High RH	473	1.75 (0.36,8.53)	0.486
15-4	RBC Count	Low vs. Normal	Comparison	1,210		
			Background RH	380	1.07 (0.61,1.86)	0.818
			Low RH	238	0.92 (0.48,1.78)	0.809
			High RH	239	1.04 (0.49,2.23)	0.917
			Low plus High RH	477	0.98 (0.57,1.68)	0.942

Table G-23. Summary of Adjusted Results for Polytomous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter	Contrast	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
15-4	RBC Count (continued)	High vs. Normal	Comparison	1,210		
			Background RH	380	0.25 (0.03,1.99)	0.192
			Low RH	238	0.54 (0.12,2.48)	0.431
			High RH	239	1.16 (0.31,4.42)	0.827
			Low plus High RH	477	0.79 (0.27,2.33)	0.676
15-6	WBC Count	Low vs. Normal	Comparison	1,210		
			Background RH	380	1.16 (0.70,1.93)	0.564
			Low RH	238	1.67 (0.96,2.91)	0.070
			High RH	239	0.64 (0.26,1.56)	0.326
	Hemoglobin	High vs. Normal	Low plus High RH	477	1.03 (0.59,1.81)	0.907
			Comparison	1,210		
			Background RH	380	0.86 (0.43,1.71)	0.660
			Low RH	238	0.82 (0.36,1.90)	0.650
15-8	Hemoglobin	Low vs. Normal	High RH	239	1.09 (0.53,2.24)	0.825
			Low plus High RH	477	0.95 (0.52,1.72)	0.855
			Comparison	1,210		
			Background RH	380	1.44 (0.91,2.29)	0.118
	Hemoglobin	High vs. Normal	Low RH	238	0.96 (0.54,1.70)	0.886
			High RH	239	0.90 (0.48,1.69)	0.735
			Low plus High RH	477	0.93 (0.59,1.47)	0.746
			Comparison	1,210		
			Background RH	380	1.01 (0.20,5.14)	0.987
			Low RH	238	--	--
			High RH	239	0.69 (0.08,6.00)	0.735
			Low plus High RH	477	--	--

Table G-23. Summary of Adjusted Results for Polytomous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter	Contrast	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
15-10	Hematocrit	Low vs. Normal	Comparison	1,210		
			Background RH	380	1.00 (0.44,2.28)	0.998
			Low RH	238	0.78 (0.29,2.07)	0.615
			High RH	239	1.01 (0.37,2.77)	0.980
			Low plus High RH	477	0.89 (0.42,1.89)	0.757
		High vs. Normal	Comparison	1,210		
			Background RH	380	--	--
			Low RH	238	--	--
			High RH	239	0.98 (0.10,9.53)	0.986
			Low plus High RH	477	--	--
15-12	Platelet Count	Low vs. Normal	Comparison	1,204		
			Background RH	378	1.40 (0.73,2.70)	0.310
			Low RH	237	0.79 (0.33,1.92)	0.604
			High RH	238	0.26 (0.06,1.11)	0.068
			Low plus High RH	475	0.45 (0.19,1.09)	0.078
		High vs. Normal	Comparison	1,204		
			Background RH	378	0.86 (0.16,4.61)	0.858
			Low RH	237	--	--
			High RH	238	3.37 (0.50,22.63)	0.211
			Low plus High RH	475	--	--
16-5	Diabetic Severity	No Treatment vs. Nondiabetic	Comparison	1,183		
			Background RH	375	0.92 (0.51,1.65)	0.771
			Low RH	232	0.95 (0.50,1.80)	0.878
			High RH	238	1.58 (0.89,2.81)	0.122
			Low plus High RH	470	1.23 (0.77,1.95)	0.385

Table G-23. Summary of Adjusted Results for Polytomous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter	Contrast	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
16-5	Diabetic Severity (continued)	Diet Only vs. Nondiabetic	Comparison	1,183		
			Background RH	375	1.24 (0.47,3.30)	0.661
			Low RH	232	1.55 (0.55,4.34)	0.408
			High RH	238	2.32 (0.88,6.12)	0.089
			Low plus High RH	470	1.90 (0.87,4.15)	0.108
	Oral Hypoglycemic vs. Nondiabetic		Comparison	1,183		
			Background RH	375	0.28 (0.11,0.71)	0.008
			Low RH	232	0.89 (0.46,1.71)	0.726
			High RH	238	1.17 (0.63,2.18)	0.624
			Low plus High RH	470	1.02 (0.63,1.65)	0.931
	Requiring Insulin vs. Nondiabetic		Comparison	1,183		
			Background RH	375	1.42 (0.59,3.45)	0.435
			Low RH	232	2.41 (1.00,5.82)	0.050
			High RH	238	3.46 (1.36,8.81)	0.009
			Low plus High RH	470	2.90 (1.40,5.99)	0.004
16-10	TSH	Low vs. Normal	Comparison	1,161		
			Background RH	365	2.33 (0.79,6.87)	0.125
			Low RH	233	0.52 (0.06,4.15)	0.536
			High RH	233	1.51 (0.39,5.91)	0.550
			Low plus High RH	466	0.89 (0.24,3.33)	0.858
	High vs. Normal		Comparison	1,161		
			Background RH	365	1.43 (0.78,2.62)	0.244
			Low RH	233	0.98 (0.43,2.24)	0.963
			High RH	233	1.58 (0.74,3.35)	0.236
			Low plus High RH	466	1.24 (0.68,2.28)	0.481

Table G-23. Summary of Adjusted Results for Polytomous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter	Contrast	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
16-21	Serum Insulin	Low vs. Normal	Comparison	987		
			Background RH	338	0.90 (0.61,1.31)	0.573
			Low RH	183	0.82 (0.47,1.44)	0.496
			High RH	181	0.55 (0.29,1.08)	0.081
			Low plus High RH	364	0.68 (0.43,1.07)	0.093
		High vs. Normal	Comparison	987		
			Background RH	338	0.99 (0.74,1.34)	0.971
			Low RH	183	1.00 (0.70,1.44)	0.994
			High RH	181	0.94 (0.65,1.37)	0.759
			Low plus High RH	364	0.97 (0.74,1.28)	0.843
18-11	Loss of Vital Capacity	Mild vs. None	Comparison	1,210		
			Background RH	380	1.28 (0.82,1.99)	0.284
			Low RH	237	0.71 (0.41,1.24)	0.235
			High RH	243	0.75 (0.43,1.32)	0.325
			Low plus High RH	480	0.73 (0.48,1.12)	0.151
		Moderate or Severe vs. None	Comparison	1,210		
			Background RH	380	1.44 (0.54,3.81)	0.468
			Low RH	237	0.34 (0.07,1.57)	0.165
			High RH	243	0.47 (0.10,2.17)	0.337
			Low plus High RH	480	0.40 (0.13,1.25)	0.115

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Table G-23. Summary of Adjusted Results for Polytomous Variables – Model 3 (Ranch Hands and Comparisons by Dioxin Category) (Continued)

Table Ref.	Clinical Parameter	Contrast	Dioxin Category	n	Adj. Relative Risk (95% C.I.)	p-Value
18-12	Obstructive Abnormality	Mild vs. None	Comparison	1,210		
			Background RH	380	1.21 (0.93,1.58)	0.164
			Low RH	237	1.17 (0.85,1.60)	0.338
			High RH	243	0.74 (0.52,1.06)	0.096
			Low plus High RH	480	0.93 (0.72,1.20)	0.556
	Moderate vs. None	Comparison	1,210			
			Background RH	380	1.22 (0.73,2.04)	0.440
			Low RH	237	0.78 (0.40,1.52)	0.459
			High RH	243	0.76 (0.39,1.49)	0.429
			Low plus High RH	480	0.77 (0.46,1.28)	0.311
	Severe vs. None	Comparison	1,210			
			Background RH	380	1.64 (0.62,4.34)	0.323
			Low RH	237	1.75 (0.62,4.89)	0.289
			High RH	243	0.28 (0.03,2.26)	0.232
			Low plus High RH	480	0.69 (0.20,2.37)	0.557

--: Relative risk, confidence interval, and p-value are not presented because of the sparse number of participants with abnormalities.

Note: Relative risk and confidence interval relative to Comparisons.

RH = Ranch Hand.

Comparison: 1987 Dioxin \leq 10 ppt.

Background: (Ranch Hand): 1987 Dioxin \leq 10 ppt.

Low (Ranch Hand): 1987 Dioxin > 10 ppt, 10 ppt < Initial Dioxin \leq 94 ppt.

High (Ranch Hand): 1987 Dioxin > 10 ppt, Initial Dioxin > 94 ppt.

Table G-24. Summary of Adjusted Results for Polytomous Variables – Model 4 (Ranch Hands: Log₂ (1987 Dioxin + 1))

Table Ref.	Clinical Parameter	Contrast	Adj. Relative Risk (95% C.I.)	p-Value
11-28	Polyneuropathy Severity Index	Moderate vs. None or Mild	1.51 (1.09,2.09)	0.013
		Severe vs. None or Mild	1.48 (0.62,3.50)	0.376
13-48	α -1-Antitrypsin	Low vs. Normal	0.84 (0.52,1.37)	0.486
		High vs. Normal	0.75 (0.44,1.29)	0.302
15-4	RBC Count	Low vs. Normal	0.91 (0.69,1.21)	0.511
		High vs. Normal	1.10 (0.60,2.00)	0.764
15-6	WBC Count	Low vs. Normal	0.76 (0.59,0.98)	0.032
		High vs. Normal	0.93 (0.72,1.20)	0.570
15-8	Hemoglobin	Low vs. Normal	0.84 (0.68,1.04)	0.108
		High vs. Normal	0.52 (0.22,1.23)	0.135
15-10	Hematocrit	Low vs. Normal	0.97 (0.67,1.42)	0.894
		High vs. Normal	1.44 (0.38,5.40)	0.588
15-12	Platelet Count	Low vs. Normal	0.73 (0.49,1.10)	0.135
		High vs. Normal	0.84 (0.43,1.64)	0.619
16-5	Diabetic Severity	No Treatment vs. Nondiabetic	1.23 (0.96,1.58)	0.097
		Diet Only vs. Nondiabetic	1.49 (1.00,2.20)	0.048
		Oral Hypoglycemic vs. Nondiabetic	1.85 (1.37,2.49)	<0.001
		Requiring Insulin vs. Nondiabetic	1.38 (0.96,2.00)	0.084
16-10	TSH	Low vs. Normal	1.08 (0.64,1.83)	0.767
		High vs. Normal	0.97 (0.74,1.27)	0.832
16-21	Serum Insulin	Low vs. Normal	0.94 (0.76,1.17)	0.589
		High vs. Normal	1.03 (0.89,1.19)	0.685
18-11	Loss of Vital Capacity	Mild vs. None	0.80 (0.65,1.00)	0.046
		Moderate or Severe vs. None	0.87 (0.50,1.50)	0.605
18-12	Obstructive Abnormality	Mild vs. None	0.91 (0.80,1.04)	0.177
		Moderate vs. None	0.87 (0.67,1.12)	0.269
		Severe vs. None	0.78 (0.50,1.22)	0.272

Note: Relative risk for a twofold increase in 1987 dioxin.